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FINAL REPORT

CONCEPT REFINEMENT AND FEASIBILITY STUDY FOR THE NEW BRUNSWICK BOTANICAL GARDEN

Prepared for:

The New Brunswick Department of Tourism, Recreation and Heritage

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NEW BRUNSWICK BOTANICAL GARDEN - Saint-Jacques

EXECUTIVE SUMMARY

Introduction

This report presents the findings and conclusions of a study related to the concept refinement, market assessment and financial analysis for a proposed botanical garden in Saint-Jacques.

Tourism Market Analysis

In New Brunswick, the number of non-resident parties travelling in the Province decreased from 1980 to 1983, although the percentage of visitors staying overnight, i.e. the capture rate, was 48.3 percent in 1983, compared to only 37.5 percent in 1980. The number of New Brunswick residents travelling within the Province increased by 3 percent from 1980 to 1984. Tourism expenditures by resident and non-resident parties have almost doubled from 1980 to 1983.

Approximately 40 percent of total in-province person-trips made by New Brunswick residents is to the Saint John River Region, which is the most popular (of which, the Saint-Jacques area is part). The most important non-resident tourism market area for the Madawaska region is Ontario (30.7 %), followed by the United States (22.7 %). Also of note is the fact that the Maritimes tourism market has increased by 150 percent from 1980 to 1983. The months of July (36.6 % of all trips) and August (24.9 %) are the most popular for visits to the Madawaska region.

By considering the capture rates of important tourist attractions in New Brunswick, wherever data is available, the capture rate of the botanical garden in Saint-Jacques has been estimated at 23

percent, which corresponds to an attendance of 67,500 for the resident and non-resident tourist parties. Along with the 5,000 students and the 500 members of the friends of the botanical garden association, the total attendance has been estimated at 73,000 for the first year of operations. With its increasing reputation, a greater awareness of the presence of a botanical garden in Saint-Jacques, and an effective promotion of the attractions of the garden, the attendance should increase substantially in the first few years, to reach a more stable level during the fifth year of operations. The attendance has been projected as follows:

Year	Tourists	Students	Members	Total
first	67,500	5,000	500	73,000
second	82,500	5,250	750	88,500
third	97,500	5,513	1,000	104,013
fourth	107,500	5,788	1,250	114,538
fifth	115,000	6,078	1,500	122,578

Concept Refinement

The Concept utilizes the existing junction road which crosses the Canadian National Railroad for access to the botanical garden. A landscaped entry drive will establish the horticultural theme upon entry.

Service access to the visitor centre and greenhouses will be provided directly from the existing service road. Access to the existing public landing wharf is provided through the provincial park access road and through the main entry road to the gardens.

Parking is consolidated in one area, while creating three smaller lots for automobile and bus parking, enabling more landscape buffering to be done. A fourth parking lot is provided for the automobile museum.

An architecturally-modern visitor centre acts as a focal point from both the Trans Canada Highway and the horticultural entry drive. It offers a number of facilities such as a restaurant, washrooms, information/display area, administration offices, gift shop/plant sales, research laboratory and ticket control. A special garden, which will accommodate weddings and conventions, will be located near the visitor centre. A display greenhouse, of a traditional horticultural design, will provide year-round interest.

The primary path system will link the main thematic displays such as the Annual Garden, Rose Garden, and the Perennial display. This path network will be accessible to maintenance and emergency vehicles, and to an open motorized cart available for guided tours as well. The secondary path system, also accessible to maintenance and emergency vehicles, will allow the visitor to explore some of the quieter areas of the garden such as the Shade Garden, the Conifer collection and the Bog Garden.

The Concept utilizes extensive earthwork to diversify the landscape and create greater opportunities for specialized soil and microclimatic conditions. Two promontories will be created, the first for the visitor centre and the second for the Rose Garden. Intake from the Madawaska River will be located underground, feeding into the first of the two small ponds. The first pond which is at a higher elevation will flow over a small waterfall to the second pool and subsequently to the lake.

The framework planting, consisting of conifers and large trees, will define the site boundaries. A second type of planting which includes trees, shrubs, perennials and annuals will be used to create the horticultural theme areas and the landscaped setting for the visitor centre. The horticultural themes are as follows:

- the Visitor Centre will be adorned with coniferous and deciduous plants, water lilies and annuals;
- the Annual Garden will be divided into two main areas. The largest area, located near the visitor centre, will consist of summer annuals, augmented by spring flowering bulbs and fall displays of pansies and chrysanthemums. The second area of annual display is a research-oriented "trial garden";
- the Economic / Native Plant Garden will highlight native species of plants which have played an important role in the history of the area;
- the Rose Garden will exhibit a collection of many different hybrid roses such as Hybrid Teas, Miniatures, Climbing and Pillar roses, as well as Shrub roses;
- the Perennial Garden will be set in a grassy plain creating tapestries of yellows, reds or blues;
- The Arboretum will be used for the study of conifers such as spruce, pine, fir and larch and as a buffer. The arboretum will also contain a number of smaller collections such as the Bog and Aquatic Gardens, the Meadow Garden and the Shade Garden.

Financial Analysis

The capital costs were evaluated at $4,079,830. They consist of study costs ($307,000), start-up costs ($76,000), site development costs ($1,122,000), landscaping costs ($1,320,000), building costs ($905,000), fixed assets ($140,000), non durable goods ($16,000), promotional expenses ($75,000) and a contingency reserve ($118,830).

The annual operating costs were evaluated by assuming that the concept is entirely financed by the Canada-New Brunswick Tourism Agreement. A pro-forma budget is included as table 1.

The revenue was calculated according to the past experience at similar attractions such as King's Landing and the Village historique acadien. According to their figures, attendance revenues can be approximated by multiplying the attendance figures by a percentage of an adult's entrance fee. The factor used for the botanical gardens estimates is 55 percent. The gift shop and special events revenues were estimated by multiplying the attendance revenues by a factor close to unity for the gross revenue, and multiplying that figure by 50 percent to yield the net revenue from these sources.

Expenses were estimated according to experience at four botanical gardens in Canada.

According to these calculations, operating costs would show a deficit of $72,505 during the first year, $37,339 in the second and $56,989 in the third, when additional staff will be required. However these deficits would be reduced to $40,843 in the fourth year and to $33,050 in the fifth.

TABLE 1: PRO-FORMA BUDGET, CAPITAL COSTS OF $4.1 MILLION

ATTENDANCE:					
general	67,500	82,500	97,500	107,500	115,000
students	5,000	5,250	5,513	5,788	6,078
membership cards	500	750	1,000	1,250	1,500
total	73,000	88,500	104,013	114,538	122,578
DESCRIPTION	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**
REVENUE:					
attendance, general	120,656	147,469	174,281	192,156	205,563
attendance, students	5,000	5,250	5,513	5,788	6,078
attendance, membership	12,500	18,750	25,000	31,250	37,500
gift shop	141,916	173,453	204,990	226,014	241,783
special events exhibits	7,469	9,128	10,788	11,894	12,724
GROSS REVENUE	287,541	354,050	420,571	467,103	503,647
OPERATION COSTS:					
salaries	240,844	252,886	336,613	353,443	371,115
insurance	4,000	4,200	4,410	4,631	4,862
supplies/plants	34,500	36,225	38,036	39,938	41,935
tools, clothing, spare parts	4,550	4,778	5,016	5,267	5,531
electricity, telephone	6,000	6,300	6,615	6,946	7,293
heating, oil and fuel	30,450	31,973	33,571	35,250	37,012
office supplies/ books promotion	10,500	11,025	11,576	12,155	12,763
banking costs	4,000	4,200	4,410	4,631	4,862
legal and audit	3,000	3,150	3,308	3,473	3,647
GROSS OPERATING COSTS	337,844	354,736	443,555	465,733	489,019
NET REVENUE	(50,303)	(686)	(22,984)	1,370	14,628

1.0 INTRODUCTION

1.1 Background

The Department of Tourism, Recreation and Heritage has assigned The DPA Group Inc., and its associate, Fleisher Ridout Partnership, to refine the preliminary concept and program for a horticultural garden to be located at Saint-Jacques and to evaluate the financial feasibility of such a facility.

The principal objectives of the study were:

a) To revise the preliminary concept and program plan, as developed by Montreal Botanical Garden and Roche Atlantic Ltd., based on the following considerations:

- The tie-in and complementarity of the proposed development with the national network of botanical and other-type gardens.
- The uniqueness of the concept from a horticultural perspective.
- The attractiveness of the concept to international and inter-provincial tourists and an assessment of the ability to draw these tourists to the area.
- The identification of tourism promotion opportunities.
- The legal implications of proposed developments.
- The tourist seasonality factor with an assessment of the potential for full year or off-season or extended season uses of proposed developments.

b) To assess resident and non-resident markets for the total concept.

c) To prepare projected capital and operating cost estimates for the proposed development and its individual elements. This cost

analysis shall address specific items that may account for unusually high costs of development, high cost of access, lack of water or power supply, unfavorable soil conditions, and any other site aspects.

d) To prepare a financial analysis of the viability of the total project and its individual elements based on projected revenues and operating costs. This financial analysis should include a 5 year proforma budget.

e) To estimate the economic impact of the total project including increased tourist expenditures, levels of employment, income and upon the tax base.

f) To recommend a marketing strategy and promotion plan for the project.

g) To identify and elaborate upon private sector participation in the project and for private development opportunities.

1.2 Preliminary Concept and Program

The New Brunswick Botanical Garden Society has expressed interest in the development and administration of a Botanical Garden in Saint-Jacques. The New Brunswick botanical garden would complete the network of botanical and other gardens across Canada which include the Butchart Gardens, the Alberta Botanical Gardens, the Hamilton Royal Gardens, the Montreal Botanical Gardens, and the Historic Gardens at Annapolis Royal. The proposed botanical garden in Saint-Jacques will teach horticulture at all levels (from primary school to university), will promote New Brunswick's tourism industry, as well as contribute to the socio-cultural well-being in the Madawaska region.

The development of the garden will be undertaken as a travel generator project under the Canada/New Brunswick Subsidiary Agreement on Tourism Development. As described in the subsidiary agreement, a travel generator project should involve major public sector attractions which are unlikely to be undertaken by the private sector but will result in future ancillary development by the private sector which is complementary to the travel generator project. The travel generator project should cater primarily to the interprovincial and/or international tourist market.

The preliminary concept had been developed by the Montreal Botanical Gardens and Roche Atlantic Ltd. in April 1985. According to their estimates, the construction of an 8 hectare botanical garden in Saint-Jacques would require a total investment of $2.8 million, with an annual operating budget of $250,000. It would be located near other tourist attractions such as a golf course, a ski resort, a provincial park named "Les Jardins de la République" as well as the picturesque Madawaska River. As the Madawaska County is bounded by the Province of Quebec and the State of Maine, a tourist attraction in the region has the potential to capture non-resident tourists. According to projections, the botanical garden could accommodate 95,000 to 140,000 during the tourist season extending from June 15 to September 15.

Two types of planting were planned: large tree planting and horticultural and/or ornamental planting. The first planting would involve large conifers and deciduous trees, which would border the site and provide visual screens as well as windbreaks. Horticultural planting, including shrubs, perennials and annuals, would embellish the landscape with ornamental clumps reflecting the following garden themes:

- near the entrance, the <u>Annual Garden</u>, adorned by thousands of brightly coloured annuals, would attract

the attention of the visitors. A new theme would be developed every year so that this garden becomes a local attraction.

- the Perennial Garden would consist of numerous smaller gardens, such as a tiny rock garden displaying alpine flora specimens of the region, flower beds, seasonal clumps and a few trimmed and untrimmed hedges.
- the Economic and Native Plant Garden would display edible, textile, tinctorial, aromatic, medecinal and poisonous plants.
- the Rose Garden would group together the best varieties of hardy ornamental, wild and climbing roses.

Moreover, the Arboretum would offer a vast collection of spruces, pines, firs and larches as well as two pedestrian networks.

A visitor centre would offer many services such as a 180 m^2 restaurant, a reception area, horticultural information and administration, as well as a parking lot accommodating 200 vehicles. The botanical garden would also contain a high-performance greenhouse adjacent to the visitor centre and would house temporary exhibitions as well as grow plants for outdoor gardens.

2.0 MARKET ASSESSMENT

This chapter provides an overview of New Brunswick's tourism development strategy in general and the Madawaska Region in particular. It also presents a detailed analysis of historic visitation and tourism patterns.

2.1 Province of New Brunswick

2.1.1 Provincial Tourism Marketing and Development Strategy

The draft discussion paper, A Tourist Sector Strategy for New Brunswick, presents an analysis of historic visitation to the province and concludes that tourism exhibits an overall weakness in demand and the outlook is one of slow sporadic growth. Consequently, the strategy was formulated to provide direction to government and the private sector for tourism industry development into the mid-1980's. The primary objective of the strategy is to "encourage development of the New Brunswick tourism sector in order to accelerate and realize the maximum net economic benefit to provincial residents through increased output and improved productivity in the sector". (Canada-New Brunswick Tourism Subsidiary Agreement).

The strategy adopted a three level set of program priorities as a means of rating tourism initiatives. These priorities are as follows:

1. increase direct stimulation of demand and improve plant quality;
2. stimulate development of attractions; and
3. encourage additional supply of tourist services only where needed.

Furthermore, the strategy recognizes that the greatest potential for increased tourism expenditures in New Brunswick lies in

increasing the number of visitors and lengthening their average stay. Less potential exists in attempting to increase their rate of expenditure.

Accordingly, the strategy adopted the Destination Area Approach:

> "A Tourist destination area is a specific area of New Brunswick which draws and retains a significant number of pleasure travellers for overnight and extended stays by virtue of its attractions. These attractions must be complemented by adequate services and facilities, population base and transportation links, the quality and scope of which are sufficient to permit successful marketing to an identified market."

The strategy identified six general regions in the province as Tourist Regions which were considered to have the highest present development and potential for development. It is in these areas where the continued development of the tourist industry is most likely to occur.

The destination area concept serves two functions:

a) the initial attracting of the tourist; and
b) the provision of a base from which the tourist can leisurely explore all of the features within a large surrounding area.

The strategy, however, is approximately five years old. Its general approach and recommendations are being reviewed and revised by the Provincial Government.

2.1.2 Historic Visitation and Tourism Patterns

This section presents a brief review of historic visitation and tourism patterns for the province in 1980 and 1983. The analysis provides an indication of both New Brunswick resident and non-resident tourism use by focussing on: seasonality; market types and size; reasons for visit; transportation modes; accommodation used; and tourism expenditures.

Between May and October 1980, 1,214,208 non-resident parties travelled to the province. Of this total, 455,613 parties stayed overnight. In comparison, between May and October 1983, 1,112,193 non-resident parties travelled to New Brunswick, with 536,763 staying overnight. As shown, although the actual number of visitors slightly decreased between 1980 and 1983, the percentage of visitors staying overnight, i.e. the capture rate, was 48.3 percent in 1983, compared to only 37.5 percent in 1980. During 1979/80 approximately 657,000 overnight party trips were made by New Brunswick residents to destinations within the Province. New Brunswick residents travelling within the Province completed 1,687,000 person-trips in 1984. The average length of stay for non-residents was 3.17 nights in 1980 and 2.52 in 1983; and 3.0 nights for residents in 1980.

Seasonality

Exhibit 2-1 summarizes the period of entry into the province by non-resident travellers between May and October 1980 and 1983. The majority of visitors entered the province during July and August; 54.4% and 57.3% in 1980 and 1983 respectively.

The greatest percentage of person-trips by New Brunswick residents occurred during the months of July, August and September.

EXHIBIT 2-1: PERIOD OF ENTRY OF NON-RESIDENT VISITORS BY MONTH, NEW BRUNSWICK

Month	1980 Parties	% of Total	1983 Parties	% of Total
May	94,170	7.8	97,311	8.7
June	152,447	12.6	113,205	10.2
July	353,549	29.1	385,948	34.7
August	307,655	25.3	251,569	22.6
September	185,085	15.2	151,681	13.6
October	121,328	10.0	112,479	10.1
TOTAL	1,214,234	100.0	1,112,193	100.0

Source: New Brunswick Department of Tourism, Auto-Exit Survey 1980 and 1983

Market Types and Size

Of the non-resident travellers to the province the single major market is the United States. Exhibit 2-2 presents the number of non-resident visitors by region or country of origin. Visitors from the United States represented 40.3% of all visitors, in 1980, and 37.9% in 1983. Other major regions of origin included Atlantic Canada, Quebec, and Ontario.

EXHIBIT 2-2: MARKET TYPES AND SIZE, NON-RESIDENT VISITORS, NEW BRUNSWICK

Place of Origin	1980 Parties	% of Total	1983 Parties	% of Total
Atlantic	299,447	24.7	245,719	22.1
Quebec	228,476	18.8	225,586	20.3
Ontario	153,017	12.6	167,252	15.0
Western	25,986	2.1	32,952	3.0
United States	489,120	40.3	421,055	37.9
Foreign	18,162	1.5	4,735	0.4
Unknown			14,886	1.3
TOTAL	1,214,208	100.0	1,112,185	100.0

Foreign and "unknown" collapsed together

Source: New Brunswick Department of Tourism Auto Exit Survey, 1980 and 1983

Reasons for Visit

The major reasons for visit by resident and non-resident visitors is summarized in Exhibit 2-3. The difference in the travel characteristics of the two groups is emphasized in the Exhibit. While visiting friends and relatives is clearly the dominant reason for residents (accounting for 53.1% in 1980 and 36.2% in 1984), it only accounted for about 20% of the non-resident reasons. The data also shows that non-residents were more likely to travel to New Brunswick for sightseeing in 1983 than was the case in 1981 - 37.5% and 24.8% respectively cited sightseeing as their reason for visiting.

EXHIBIT 2-3: REASONS FOR VISIT, RESIDENT AND NON-RESIDENT TRAVELLERS, 1980, NEW BRUNSWICK

Reason	1979/80 Resident %	1984 Resident %	1981 Non-Resident %	1983 Non-Resident %
Business	11.6	14.5	5.8	4.9
Shopping	2.8	--	9.1	7.0
Sightseeing	14.3	--	24.8	37.5
Visiting Friends/ Relatives	53.1	36.2	19.7	20.3
Recreation	12.0	--	1.3	1.5
Attend Event	3.4	--	1.2	0.6
Passing Through	--	--	23.5	22.5
Owned Cottage	1.5	--	0.8	.7
Other	1.3	49.3	13.8	5.0
TOTAL	100.0	100.0	100.0	100.0

Source: New Brunswick Department of Tourism, Domestic Travel Survey, 1979/80, and Auto-Exit Survey, 1980,1983, Canadian Travel Survey, 1984

Transportation Modes

The major transportation mode utilized by both resident and non-resident travellers was the passenger car. Of resident travellers, over 90% used the car in both years; and of the non-resident travellers, 87.1% and 84% respectively used the

automobile in 1981 and 1983. Another major mode utilized by non-residents were camper trucks and vans - 6.5% and 9.4% respectively in 1981 and 1983. For residents, train and bus combined accounted for about 5% of all modes in 1980 and 1984.

Another significant transportation mode utilized by non-resident travellers is bus tours. In 1985, 2,181 bus tour nights (defined as one bus per night) were spent in the province. Assuming an average number of persons per bus of 40 and an average party size of 2.5, this would represent 34,896 party nights.

Accommodations

The type of accommodation used by resident and non-resident overnight travellers is presented in Exhibit 2-4. It is interesting to note that the difference between resident and non-resident travellers is not very significant in any of the accommodation types. In 1980, Residents were much more likely to stay with friends and relatives in 1984 than they were in 1980 - 63% compared to 50%. This may be compared to 45% of non-residents in 1980 and 1983.

Tourism Expenditures

Tourism expenditures by resident and non-resident parties, by category, are summarized in Exhibit 2-5. Total expenditures in 1980 were $54.1 million for residents and $79.4 million for non-residents. In 1983, total expenditures for non-residents were $145.4 million and $105.3 for residents in 1984. Two of the largest expenditure categories were food-related and transportation.

EXHIBIT 2-4: ACCOMMODATION UTILIZED NEW BRUNSWICK (000's of NIGHTS)

Type	Resident Nights		Non-Resident Nights		% OF TOTAL Residents		Non-Residents	
	1980	1984*	1980	1983	1980	1984	1980	1983
Hotel/Motel	247.5	244	304.6	403.7	15.7	10.8	20.1	23.3
Friends and Relatives Homes	782.0	1420	692.5	787.4	49.6	63.1	45.7	45.4
Campgrounds	248.2	188	245.3	312.9	15.8	8.4	16.2	18.0
Cottage	134.3	179	134.6	180.7	8.5	8.0	8.9	10.4
Tourist Home	--	--	6.4	6.3	--	--	0.4	.4
Hunting/Fishing Lodge	--	--	52.9	7.2	--	--	3.5	.4
Other	163.9	220	79.6	36.8	10.4	9.7	5.2	2.1
TOTAL	1,575.9	2251	1,515.9	1,735.0	100.0	100.0	100.0	100.0

* Only available in person-trips, number of persons per party was not available.

Source: New Brunswick Department of Tourism, Domestic Travel Survey, 1979/80; and Auto-Exit Survey, 1980.

EXHIBIT 2-5: TOURISM EXPENDITURES BY CATEGORY, 1980 NEW BRUNSWICK ($000,000)

Category	EXPENDITURE				% OF TOTAL			
	1980 Resident ($)	1984 Resident ($)	1981 Non-Resident ($)	1983	1980 Resident	1984 Resident	1981 Non-Resident	1983 Resident
Accommodation	8.8	11.4	12.7	22.6	16.3	10.8	16.0	15.5
Restaurants	17.0	26.1	18.7	34.4	31.4	24.9	23.6	23.7
Food Stores			7.1	15.6			8.9	10.7
Transportation	11.5	33.7	20.5	41.0	21.3	32.0	25.8	28.2
Recreation and Entertainment	3.7	7.1	3.8	6.0	6.8	6.7	4.8	4.1
Other	13.1	27.0	16.6	25.8	24.2	25.6	20.9	17.8
TOTAL	54.1	105.3	79.4	145.4	100.0	100.0	100.0	100.0

Source: New Brunswick Department of Tourism, Domestic Travel Survey, 1979/80; and Auto-Exit Survey, 1980, 1983; Canadian Travel Survey, 1984.

2.1.3 New Brunswick Tourist Attractions

In all, ten destination areas have been identified for the Province of New Brunswick:

- the Campbellton-Dalhousie region
- the Acadian peninsula
- the Kouchibouguac National Park
- the Shediac-Moncton region
- the Fundy National Park
- the City of Saint John
- the Fundy Isles
- the Fredericton-Mactaquac region
- the Madawaska-Grand Falls region

The tourist attractions found in these destination areas render them popular. A detailed description of specific tourist attractions in the province is shown as Exhibit 2-6, which corresponds to Figure 2-1. Many attractions, such as the Gorge at Grand Falls and the Historical Village of King's Landing, had visitation rates reaching 100,000 visitors during the summer season.

2.2 The Madawaska Region

The analysis of tourism infrastructure and use within the Madawaska region is divided into four broad areas:

- a discussion of the destination areas for the Saint John River Valley tourist region,
- an analysis of available tourist accommodations and occupation rates,
- a review of historic visitation , and
- an analysis of tourism markets and patterns of use.

2.2.1 Destination Areas

Saint-Jacques, in the Madawaska county, is part of the Saint John River Valley tourist region, which is shown in Figure 2-2. Two destination areas are identified for this region, the Madawaska-Grand Falls area and the Mactaquac-Fredericton area. Saint-Jacques therefore belongs to the Madawaska-Grand Falls region. That destination area offers several interesting tourist attractions such as the Water slides, the Jardin de la République provincial park, the Grand Falls gorge, museums, as well a ski resort. These are described in more detail in Exhibit 2-7.

EXHIBIT 2-6: TOURIST ATTRACTIONS OF NEW BRUNSWICK

name	location	type and size of attraction	special events	programs	admission price	attendance
Kings Landing	Prince William York county	historic village 300 acres in all; of which 75 are cleared	at least 12 of the 16 weeks that the village is opened offers a special event such as an auction, an agricultural day, e etc.	in the fall, students ranging from kindergarden to grade nine can spend a day at the village school	$5 adults; $4 groups; $11 families; $2.5 children seniors and children under 6 free; reduced prices in the fall	110,000 per year of which 40 % local and maritime provinces; 20 % Québec; 20 % Ontario; 20 % United States, with more emphasis on Maine residents; 500 season passes
New Brunswick Museum	Saint John	museum	national and international art treasures and historic artifacts, natural science gallery, works by Maritimes artists, provincial and Canadian memorabilia, a bookstore and tearoom			34,806 visitors and 525 season passes
Mount Carleton Provincial Park	Nicteau Lake, Plaster Rock	provincial park, 88 campsites	offers a wide range of outdoor activities; fishing, boating, bird-watching, rockhounding, hiking trails, campsites			1,103 permits 3,301 campers

Village historique acadien	Bertrand	historical village	In 1987, more than 15 special events, all related to history, such as a traditional music day, a farmer's market, etc.	during the summer, a youth program allows students to spend a day at the Village	$5 adults, $4 groups of 10 or more, $11 families, free for seniors 50 or over, resident; $3 seniors 50 or over non-resident and children	100,000 visitors per year, origin: 34 % N.-B.; 46 % Québec; 7 % Ontario; 1 % other maritime provinces; 3 % Western Canada; 6 % United States; 2 % France; 1 % other foreign; 158 motorcoach tours, has been decreasing in the past few years
Le Centre Marin	Shippegan	Marine Centre 38,000 sq. ft.	very few special events	in the spring, student education program; in the summer, fishing promotion day	$3 adults, $1.5 students, $5 family rate, $25 season pass	between 50,000 and 55,000 per year, most (60%) come from Quebec, 30 % from N.B., 10 % other
Magnetic Hill	trans-Canada highway Moncton	natural tourist attration	restaurant, gift shop, water slided, zoo, picnic tables		free	the most popular tourist attraction for non-resident travellers; about 830,000 visitors per year
Reversing Falls	Saint John	natural tourist attraction	observation points, tourist information centre		free	48,759 vistors in the tourist information centre
The Rock provincial park (Hopewell Rocks)	Fundy coast, highway 114	natural tourist attraction, playground, 40 picnic sites	restaurant picnic sites, hiking trails		free	

Mactaquac provincial park	near trans-Canada highway, highway 105	all-season park, 1,400 acres	campground, picnic sites, swimming, canteen, marina, 18-hole golf course, restaurant, hiking trails	
Magic Mountain	trans-Canada highway Moncton	water slides		141,300 visitors

FIGURE 2-1 : NEW BRUNSWICK TOURIST ATTRACTIONS

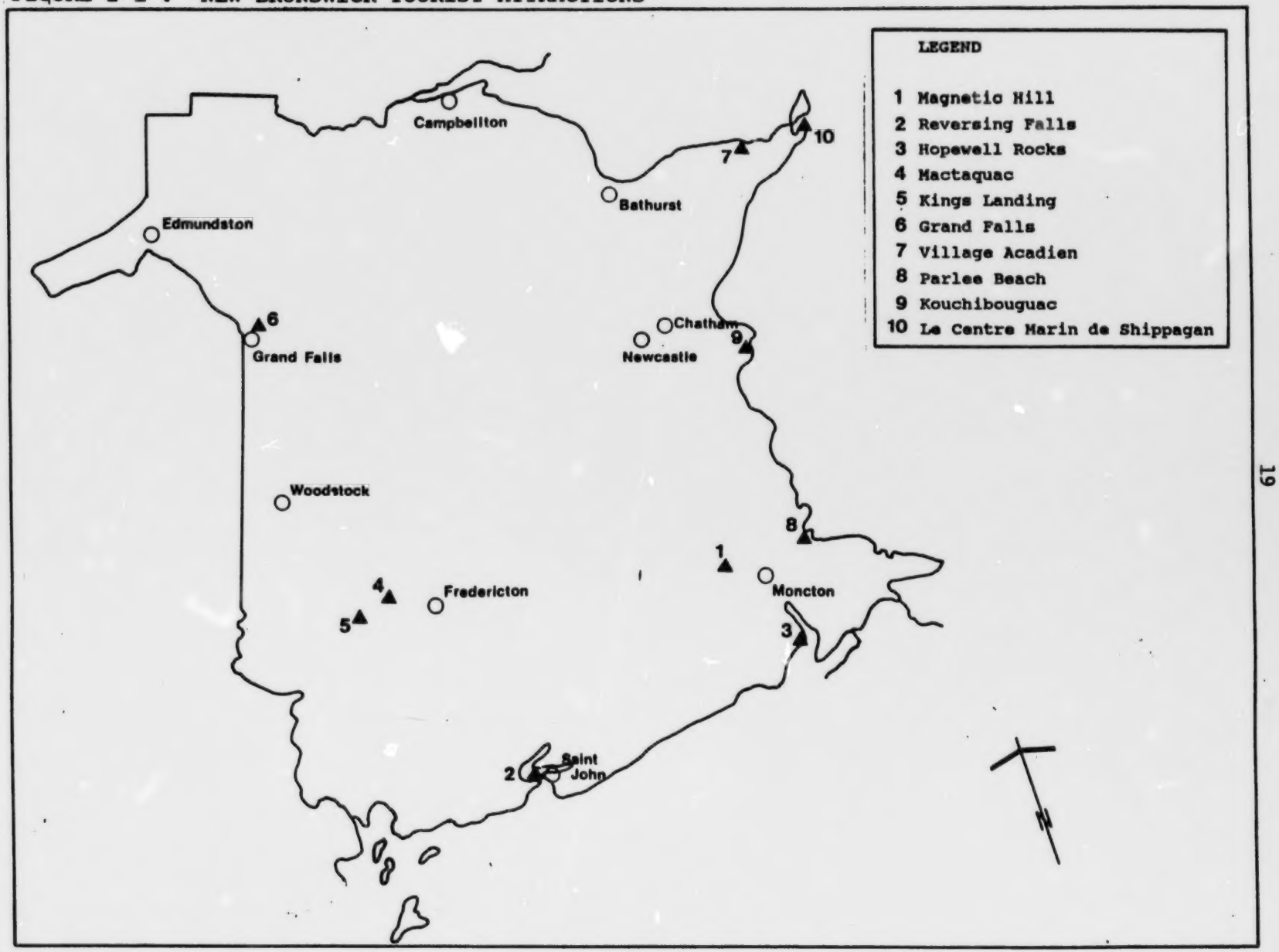


FIGURE 2-2 : SAINT JOHN RIVER VALLEY TOURIST ATTRACTIONS

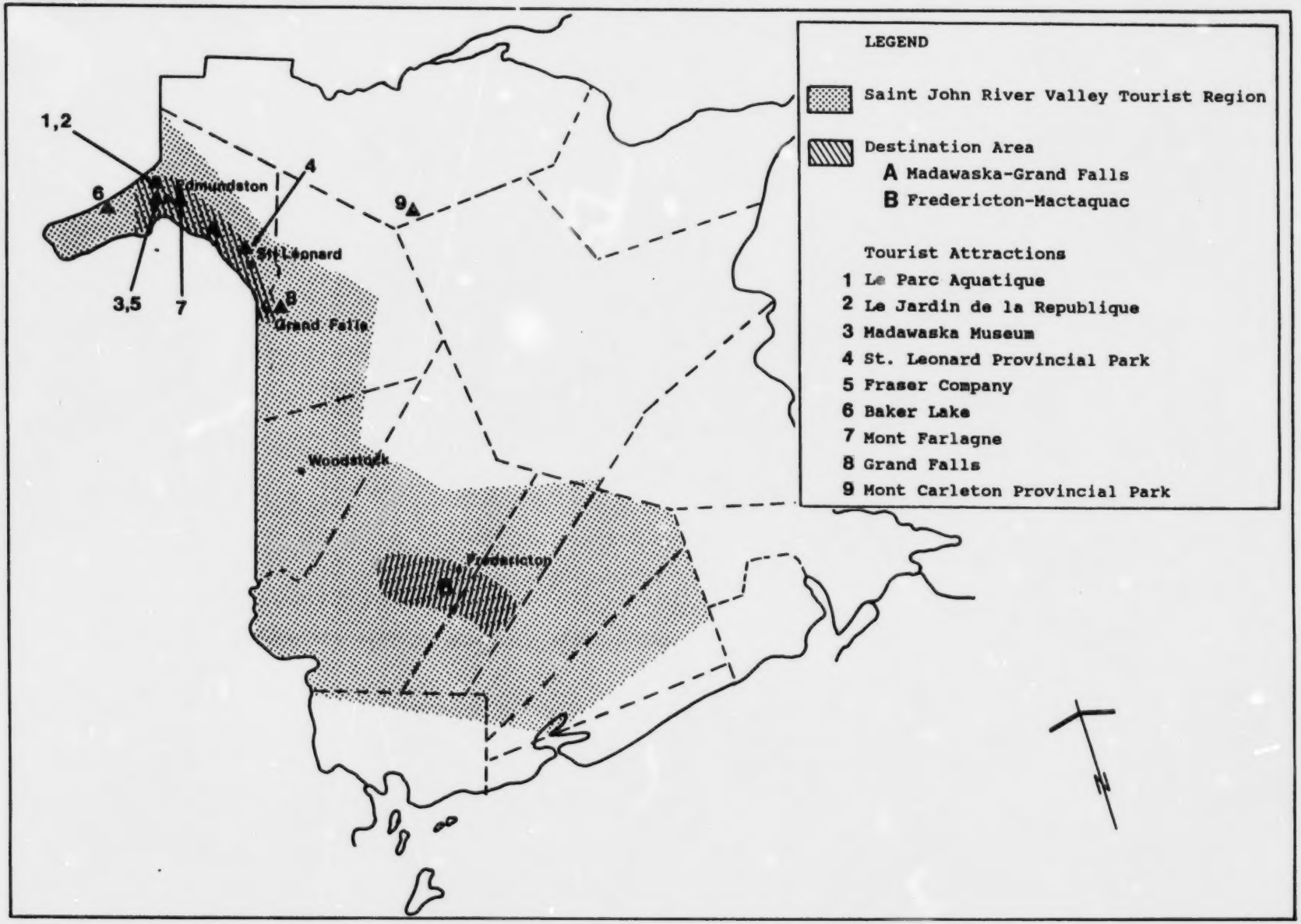


EXHIBIT 2-7: MADAWASKA COUNTY TOURIST ATTRACTIONS

name	location	type of attraction	programs special events	admission price	attendance
Le parc aquatique	trans-Canada highway, St.-Jacques	water slides	picnic tables park, canteen, pool for children	$8 for the complete day which lasts from 10 A.M. to 9 P.M.	12,000
Le Jardin de la République	trans-Canada highway, St.-Jacques	campground	44 ha park 115 sites pool tennis courts trails, play-ground, volleyball canteen, amphitheatre	$8.5 per camping site	5778 permits; 18,500 campers; 55,000 visitors
Musée du Madawaska	trans-Canada highway, Edmundston	museum, 16,000 feet squared, 2 exposition halls 106-seat auditorium large exposition hall	local history and travelling expositions, children's and senior's programs	$1 adult; $.50 children	4,248 visitors
Gallerie Colline	Collège Saint-Louis, Edmundston	exhibitions (note: the gallerie was not opened in 1986-87, planning to re-open in 1988	special exhibitions	free	was not opened in 1986-87
Compagnie Fraser	Edmundston	pulp and paper museum	guided tours available		

Lac Baker provincial park	Lac Baker highway 120	provincial park; 20 picnic sites	swimming/supervised, waterskiing, sailing, tennis courts, canoe	free	12,230 visitors
musée de Clair	Highway 205 Clair	local history museum			
Saint-Basile museum	trans-Canada highway Saint-Basile	local history museum, in a reproduction of a 1786 chapel			
Mont Farlagne	trans-Canada highway, Edmundston	downhill and cross country skiing	ski school, special events related to skiing, opened mid-dec. to mid-april night skiing, cafeteria, lobby, repair work, ski playground, snow-making machine, 12 runs, equipement rental picnic facilities	season pass: $ 310 adults, $ 260 students, $ 210 children day pass: $ 18 night pass: $ 12	106,000 visitors, including 66,000 season passes and 44,000 day passes
Saint-Leonard provincial park	highway 17, Saint-Leonard	picnic and campsites	34 campsites; 50 picnic sites		10,441
Sports République	Chemin Rossignol, Edmundston	cross country skiing	cottage, ski school		
Grand Falls Gorge	Grand Falls	natural attraction	no special events	free	116,000 visitors
Antique automobile museum	trans-Canadian highway	museum		free	

2.2.2 Accommodation and Occupation Rates

Accommodation

Exhibit 2-8 displays hotel/motel and campground capacity for the year 1986 in the Madawaska region. The tourist season was designated from June to September (a total of 122 days), while the off-season, totaling 243 days, extends from October to May.

EXHIBIT 2-8: ACCOMODATIONS IN THE MADAWASKA REGION

	# facilities	# units tourist season	# units off-season
hotels/motels	18	541	515
campground sites	9	548	___

In Madawaska County, there are 18 hotels/motels totaling 541 units during the tourist season and 515 during the off-season. Campgrounds in the County contain almost as many sites.

Besides hotels, motels and campground facilities, other types of accommodation are frequently used by visitors, such as a friend's or relative's spare room, a summer home or a sports lodge. Although little data is available on these types of accommodation for Madawaska County alone, the Auto Exit Survey gathers this information for non-resident parties while the Canadian Travel Survey gathers this information for the tourist region. This information is included as Exhibit 2-9.

Exhibit 2-10 displays occupation rates in Madawaska County, by month for the years 1982, 1984 and 1986. The occupation rates for 1986 were lower than for 1984, except during the months of

EXHIBIT 2-9: ACCOMODATION USED BY NON-RESIDENT VISITORS, MADAWASKA, VICTORIA AND CARLETON COUNTIES (1983) AND BY RESIDENT VISITORS, SAINT JOHN RIVER VALLEY (1984)

Types	non-resident parties	nights per party, non residents	party nights, non residents	% total nights, non-residents	Night (000s) residents	% total nights, residents
hotel	3 422	2.1	7 339	2.4	16	4.6
hotel/motel	31 719	1.7	52 678	16.9	45	12.9
friends/relatives	29 025	5.7	164 446	52.8	232	66.5
campground	19 061	2.8	53 074	17.0	28	8.0
cabin/cottage renting	1 557	8.0	12 466	4.0	—	—
hunting and fishing lodge	305	5.1	1 557	0.5	—	—
owner of cottage	1 866	7.8	14 588	4.7	24	6.9
tourist home	348	1.4	499	0.2	—	—
bed and breakfast	568	2.0	1 132	0.4	—	—
other	1 051	3.4	3 586	1.2	—	—
TOTAL	88 922	3.5	311 365	100	349	100

EXHIBIT 2-10: OCCUPATION RATES BY MONTH, MADAWASKA COUNTY

Month	1982 # units	1982 Rate (%)	1984 # units	1984 Rate (%)	1986 # units	1986 Rate (%)
january	494	30	498	68	445	30
february	446	38	488	39	464	37
march	446	43	488	40	426	44
april	520	35	512	34	442	32
may	522	40	540	48	459	39
june	582	48	568	50	512	54
july	591	73	587	81	528	84
august	556	69	595	78	535	82
september	576	44	566	57	520	58
october	522	36	533	50	500	45
november	443	35	502	42	483	31
décember	412	29	510	31	470	29

June, July, August, and September, since these were the highest ever registered for this county. At the provincial level, the occupation rates for 1984 and 1985 were stable at approximately 57 percent. The occupation rates for the tourist season remained at 66 percent during these two years.

In 1980, a total of 242,986 room-nights were used, which yields an occupation rate of 51 percent. In 1985, a total of 284,193 room-nights were used, corresponding to an occupation rate of 56 percent. The increase in the occupation rate is attributed to the shoulder season, which includes the months of May and October.

2.2.3 Historic Visitation

The Auto Exit Survey groups the Madawaska, Victoria and Carleton counties together for historic visitation and capture rate data; therefore this analysis also includes all three counties.

Non-Resident Traffic

In 1983, a total of 216,580 non-resident parties spent at least one night in New Brunswick while passing through in either or all of the counties mentioned, while in 1980, there were 175,032. In 1983, approximately 40 percent of these visitors entered New Brunswick at the Saint-Jacques entry point and 27 percent of these entered in Aulac, on the Nova Scotia border. Another 7 percent entered the province at Cape Tormentine, which is the terminal for the ferry service linking New Brunswick and Prince Edward Island, while 6 percent entered in Woodstock. The Madawaska, Victoria and Carleton counties captured a total of 78.5 percent in 1983 and 78.2 percent in 1981 of the non-resident parties that stayed overnight in New Brunswick and that drove through one of the counties in question. Those tourists planned to stay in New Brunswick an average of 4.8 nights.

Resident Traffic

The Canadian Travel Survey reports that 680,000 residents of New Brunswick travelled in the Saint John River Valley tourist region, which is by far the most popular with 40.3 percent of the resident trips. Residents spend 762,000 nights in this tourist region.

Motorcoach Tours

In 1986 there were a total of 219 motorcoach tours in the Edmundston-Woodstock region. Tour data since 1978 is shown at Exhibit 2-11. The number of tours in that region as a percentage of the province's total reached a peak of 9.8 percent in 1984. Data for the market areas was not collected after 1982, but during that year, most motorcoach tours originated in Western Canada (28.6 %), while other important markets included New England and Central Atlantic States (22.1 %), Ontario (20.1 %) and Quebec (19.5 %).

Most of the motorcoach tours in 1982 occurred in September/October (41.6 %) and in July (22.7 %).

EXHIBIT 2-11: MOTORCOACH TOURS IN WOODSTOCK-EDMUNDSTON

year	numbers of tours	% of provincial tours
1978	100	6.3
1979	133	7.3
1980	173	7.9
1981	173	6.9
1982	154	6.9
1984	196	9.8
1985	207	9.5
1986	219	9.1

School trips and their policies

The students living and studying in the vicinity of the botanical garden in Saint-Jacques is potentially an important market. Enrollment in each school district is shown in Exhibit 2-12, which corresponds to Figure 2-3. In New Brunswick, there are 13,578 francophone students that could visit the botanical garden on a school trip, if the school districts of Dalhousie (no. 35) and Campbellton (no. 37) are included. On the other hand, there are 13,012 students enrolled in anglophone districts that could attend a school trip. In the adjacent school districts of Quebec and Maine, there is an enrollment of 13,084 and 16,713 students.

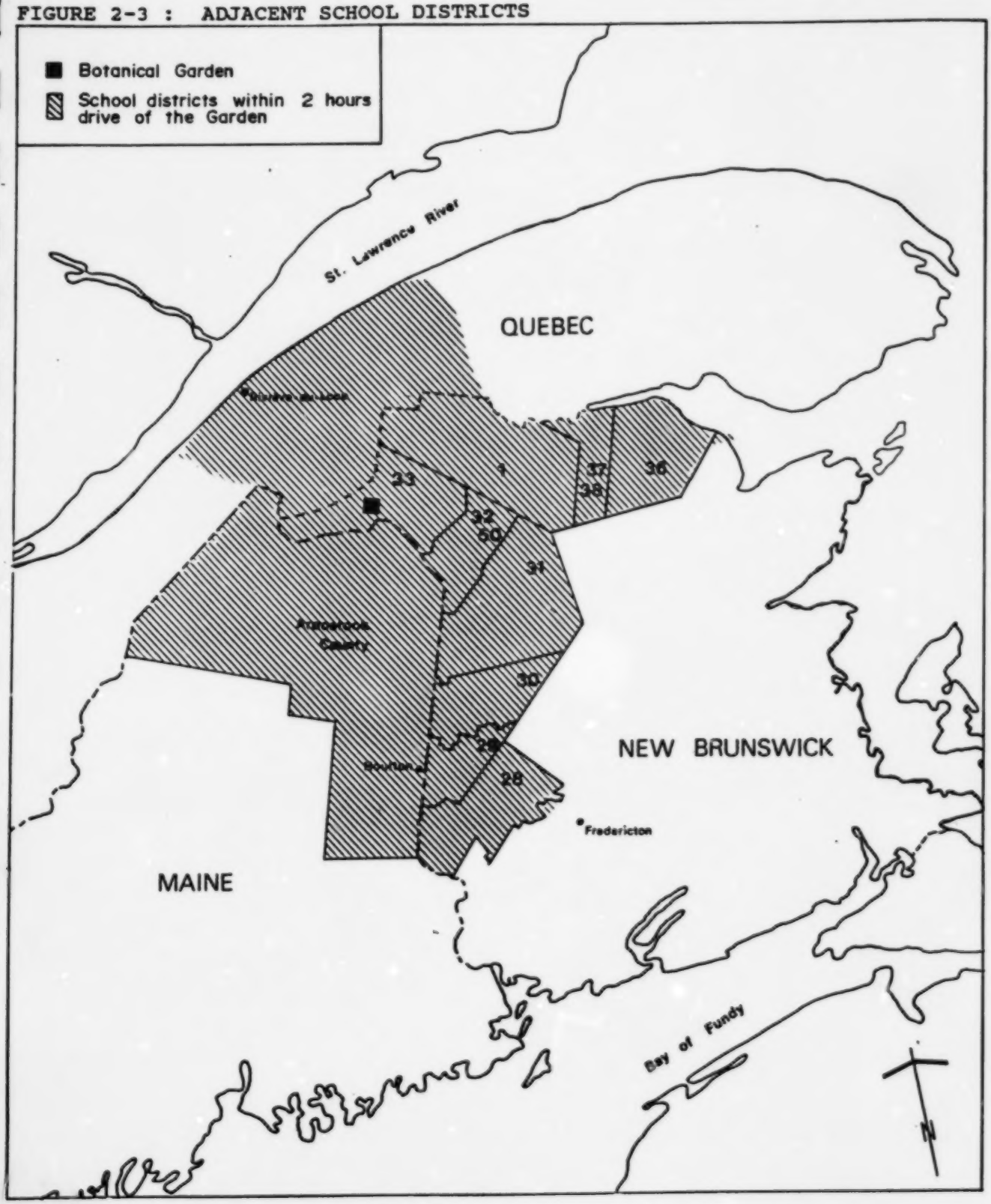
In New Brunswick and in Quebec, school trips follow governmental regulations as follows: a trip related to the curriculum is financed by the school board, while an extra-curricular trip requires prior approval and is sometimes financed by the students themselves. All funding applications are submitted by the teacher, who also decide the destination of a school trip.

In the state of Maine, school trips must meet stringent regulations. The trip must have a theme related to class work, must stimulate interest and must be discussed in class after the fact. Also, school trips are evaluated according to the following criteria: worthiness of activity, relation to class work, distance to travel, transport mode, cost and parental approval. International trips must be included in each interested school board's yearly budget.

Tourist Bureau Visitation

Available visitation data for the Edmundston Tourist Bureau, near the Quebec border, is also a good source of information on the tourist markets for the region. In 1987, there were 41,895 visitors to the centre, which represents a 1 percent increase

FIGURE 2-3 : ADJACENT SCHOOL DISTRICTS



from 1986. Since the centre is located near the border, it is not surprising that most visitors come from Ontario (45.0 %) and Quebec (35.3 %).

EXHIBIT 2-12: REGIONAL SCHOOL DISTRICT ENROLLMENT

School district	province/state	number of students
District 1, St.-Quentin	N.-B.	1 363
District 28, Nackawick	N.-B.	1 897
District 29, Woodstock	N.-B.	2 810
District 30, Florenceville	N.-B.	2 217
District 31, Perth Andover	N.-B.	2 257
District 32, Grand Sault	N.-B.	2 800
District 33, Edmundston	N.-B.	6 032
District 35, Dalhousie	N.-B.	1 592
District 36, Dalhousie	N.-B.	1 784
District 37, Campbellton	N.-B.	1 791
District 38, Campbellton	N.-B.	1 543
District 50, Grand Falls	N.-B.	504
Aroostook county	Maine	16 713
Rivière-du-Loup	Québec	5 911
Temiscouata	Québec	2 262
des Montagnes	Québec	1 587
Trois-Pistoles	Québec	2 230
des Frontières	Québec	1 094

2.2.4 Tourist Markets and Tourist Patterns

A brief tourist market analysis is presented, following the available data from the Auto Exit Survey for 1980 and 1983.

Seasonality

Exhibit 2-13 presents the period of entry for non-resident travellers. It is apparent that the dominant months are July and August with 61.5 percent and 71 percent of total overnight parties in 1981 and 1983.

EXHIBIT 2-13: PERIOD OF EXIT, NON RESIDENT TRAVELLERS, MADAWASKA, VICTORIA AND CARLETON COUNTIES, 1980 AND 1983

	1980		1983	
month	parties	(%)	parties	(%)
may	4 083	5.9	3 864	4.5
june	5 994	8.7	9 281	10.9
july	25 459	37.1	31 098	36.6
august	23 272	33.9	21 177	24.9
september	4 758	6.9	13 458	7.2
total	68 640	100.0	84 957	100.0

Market Areas

There are two principle tourism markets: New Brunswick residents and non-resident travellers. No actual data is available on the actual number of trips made by New Brunswick residents to the Madawaska region, nor is there data on their characteristics. The Canadian Travel Survey reveals that 680,000 residents travelled in the Saint John River Valley tourist region. However, information is available on the non-resident market, its origin and size. Exhibit 2-14 details the non-resident visitation by origin in 1980 and 1983. The largest single group are Ontario visitors, with 30.7 percent of the total visitors in 1983 and 31.7 percent in 1980, followed by the United States, with 22.7 percent in 1983 and 29.0 percent in 1980. Other important markets include Quebec, the Maritimes and Western Canada. A comparison of 1980 and 1983 data reveals that the Maritimes market has increased by 150 percent, increasing from 6,135 visitors in 1980 to 15,344 in 1983, while the American market has decreased from 19,922 visitors in 1980 to 19,151 in 1983.

EXHIBIT 2-14: MARKET TYPES AND SIZE (NON-RESIDENT TRAVELLERS), MADAWASKA, VICTORIA AND CARLETON COUNTIES, 1980 AND 1983

non-resident parties	1980	(%)	1983	(%)
Ontario	21 744	31.7	26 087	30.7
Québec	17 486	25.5	18 549	21.8
Maritimes	6 135	8.8	15 344	18.0
Other, Canada	2 213	3.2	3 838	4.5
United States	19 922	29.0	19 151	22.7
Foreign/Unknown	1 140	1.7	1 990	2.3
Total	68 640	100.0	84 959	100.0

Reason for Visit

What draws people to an area, the reason for visit, is an important market component. Exhibit 2-15 summarizes the non-resident reasons for visits in 1980 and 1983. The majority of non-resident travellers stated that the reason for visiting was sightseeing; approximately 36 percent in 1983 and 37 percent in 1980. Other reasons for visit were to visit friends and relatives, as well as passing through.

EXHIBIT 2-15: REASON FOR VISIT (NON-RESIDENTS, OVERNIGHT PARTIES), MADAWASKA, VICTORIA AND CARLETON COUNTIES, 1980 AND 1983

reason for visit	1980 (%) of total	1983 (%) of total
visiting friends/relatives	28.5	30.8
sightseeing	36.6	35.6
business	5.0	5.3
outdoors activities and recreation	1.5	1.7
passing through/destionation outside New Brunswick	24.5	24.5
other	4.9	2.1

Transportation Modes Used by Visitors

The major transportation mode for visitors to the Madawaska, Victoria and Carleton counties is the automobile. In 1983, 76.4 percent of non-resident parties travelled by passenger car, while 7.8 percent used camper vehicles.

2.3 Summary of Local and Regional Tourism Markets

The number of non-resident parties travelling in New Brunswick has decreased from 1980 to 1983, but the percentages of parties staying overnight, i.e. the capture rate, has increased from 37.5 percent in 1980 to 48.3 percent in 1983. However the number of residents travelling within New Brunswick has increased by 3 percent from 1980 to 1984. Resident and non-resident tourist expenditures have almost doubled from 1980 to 1983.

The tourism industry in Madawaska seems in good shape, since that county is part of the most popular tourist region in the province. The non-resident tourist traffic flow and the occupation rates for the tourist season have increased. The tourist market of the other Maritime provinces has increased by 150 percent from 1980 to 1983.

2.4 Canada's Botanical Gardens

There are over 140 notable horticultural and botanical attractions across Canada. They vary greatly in size, scope, mandate, purpose and environment. The terms of references stipulate that the botanical garden in Saint-Jacques is to complete the national network including the Butchart Gardens, the Alberta Botanical Gardens, the Hamilton Royal Gardens, the Botanical Gardens of Montreal and the Historic Gardens in Annapolis Royal. Since the botanical garden of Saint-Jacques

will have an educational mandate from the grade school level to university, other gardens with similar mandates should also be examined: U.B.C. Botanical Gardens, University of Guelph Arboretum, Muttart Conservatory and Van Dusen Botanical Gardens. Exhibit 2-16 presents the available information regarding these gardens, and is accompanied by Figure 2-4.

The largest botanical garden, the University of Guelph Arboretum with its 165 hectares, does not keep attendance data as the admission price is free. The University of British Columbia, which is the second biggest among the fore-mentioned botanical gardens, has attendance figures of 80,000 during the summer season. The Historic Gardens at Annapolis Royal (Nova Scotia), covering 4 hectares, is comparable in size to the proposed 8-hectare garden in Saint-Jacques. The Annapolis Royal has 32,000 visitors per year.

The most popular gardens, the Montreal Botanical Garden and the Royal Botanical Garden in Hamilton, which have attendance figures of 1,500,000 and 750,000 yearly respectively. These large attendance figures are attributed to their proximity to Canada's two largest cities, Montreal and Toronto.

The Butchart Gardens charges the highest admission price, $6.50, but also offers many special events such as fireworks, variety shows, cinemas and plays.

2.5 Capture Rates

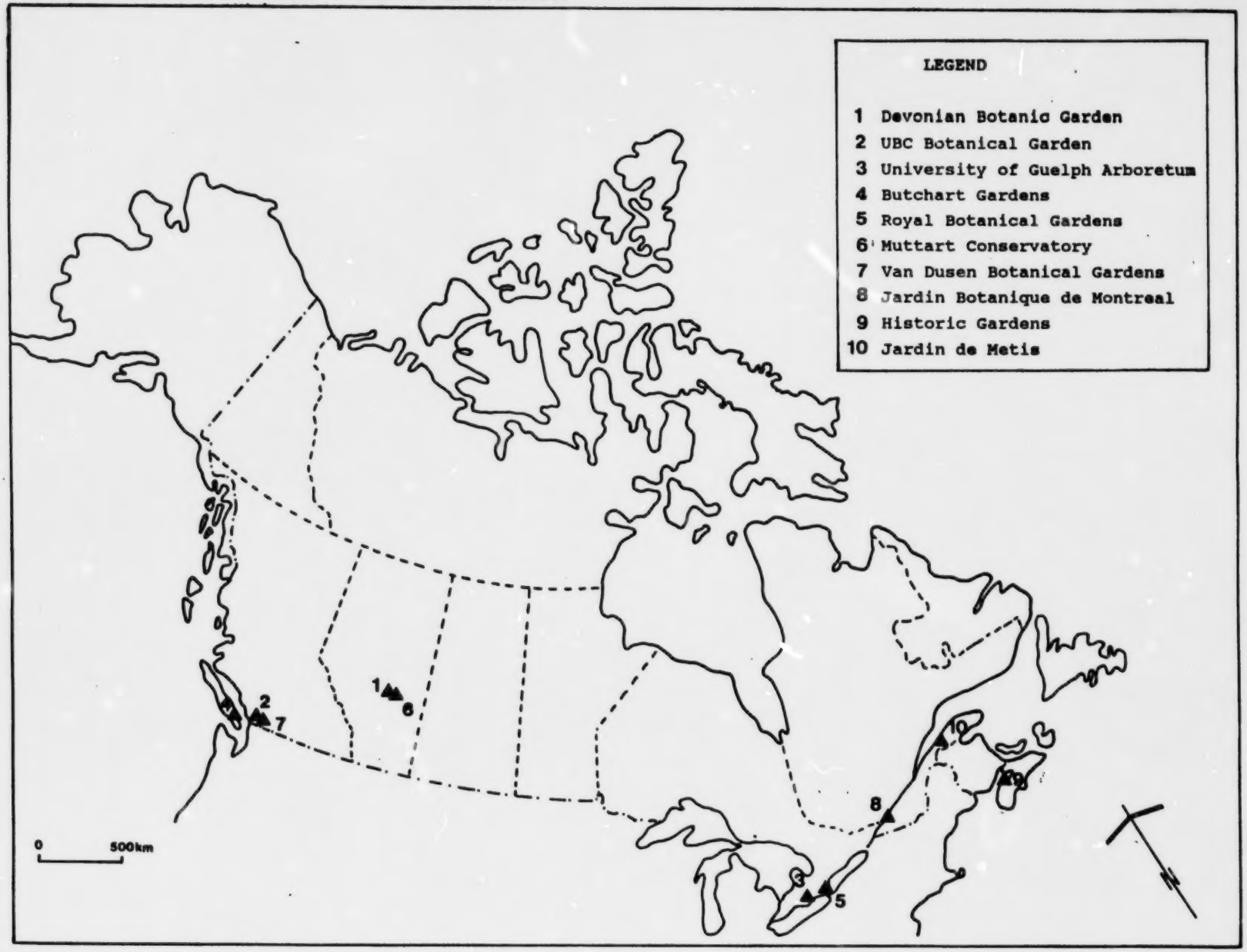
This section consolidates the previous data in order to obtain a capture rate for the proposed botanical garden in Saint-Jacques. The analysis is based on a methodology that utilizes the attendance of an existing attraction with respect to the region's resident and non-resident traffic flow.

EXHIBIT 2-14: BOTANICAL AND OTHER TYPES OF GARDENS IN CANADA

facility	location	surrounding	size	attendance	food service	gift shop	admission price	comments
Devonian Botanic Garden	10 km west and 15 km south of Edmonton	the northernmost botanical garden in North America	32.4 ha	32 000	none	none	free	. university associated . guided tours available . publishes newsletter and other informative pamphlets on plants of the region
UBC Botanical Garden	University of British Columbia, Vancouver	terrain de l'Université, Point Grey	56.7 ha	80 000 visitors during the summer	none	none	winter: free	. educational and research facilit . educational programs (courses, workshops, etc.) . information program on radio and television . telephone information service . symposiums and conferences available to public
University of Guelph Arboretum	Guelph, Ontario	University of Guelph campus	165 ha, of which 63 in wild state	10 000 participate in programs yearly	none	none	free	. educational, recreational and research facility . special events: concerts, conferences, horticultural day . nature interpretation programs for children and adults
Butchart Gardens	Brentwood Bay, British Columbia, 21 km north of Victoria	countryside private garden	52.7 ha	500,000 yearly	. dining room . restaurant . canteen	botanic theme (seeds, crafts, films, souvenirs)	$6.50 (1986)	. special events: variety shows (weekdays in the summer) fireworks (saturday nights july and august), puppet shows, cinemas, etc. . lighted at night

Royal Botanical Gardens	Hamilton, Ontario	park	22 ha	750,000 yearly	. two tea houses summer only 115 place en dedans; 110 dehors	revenue: $230,000 dry plants	parking $2 Rock Garden; $1 adults, $.75 children for the Mediterreanean Garden	. auditorium . conferences . special events: cross country skiing, maple syrup exposition (Christmas, springtime, etc.)
Muttart Conservatory	Edmonton	commercial residential	23 000 ft. sq.	110,000 to 125,000	sandwich/café sitting area in lobby	profitable	$3.00	
Van Dusen Botanical Gardens	Vancouver	park	22 ha	130,000	licenced and profitable, 142 indoor / 90 patio	botanical theme profitable	$3.35	
Jardin Botanique de Montréal	Montréal	residential	41 ha	1,500,000	cafeteria with 100 seating indoor, 2 outdoor with 150 seats $450,000 revenue	tourist tour recordings profitable	free	. auditorium - 450 seats . conference facilities
Historic Gardens	Annapolis Royal	residential	4 ha	32,000 including 130 buses	restaurant, 50 seats, in summer gazebo with 50 additionnal seats	botanical theme as well as craft, profitable	$3 general $1.5 seniors reduced prices for motorcoach tours, free for school trips	. few special events

FIGURE 2-4 : BOTANICAL GARDENS IN CANADA



For example, the Historical Gardens of Annapolis Royal, in Nova Scotia, has an attendance figure of 32,000 per year. The tourist traffic flow in the region has been established at:

non-residents	208,800	(1985)
residents	135,000	
total	343,800	

These figures yield a capture rate of:

$$\frac{32,000}{343,000} = 9\ \%$$

The Madawaska region, which would host a botanical garden similar in size to the one in Annapolis Royal under this concept, has the following tourist traffic flow:

non-residents	40 % of 216,580 =	86,632
residents	30 % of 680,000 =	204,000
total		290,632
(say a range of 275,000 to 300,000)		

In applying the Annapolis Royal capture rate to the figures of Saint-Jacques, the attendance can be estimated at 25,000 to 27,000 visitors per year.

This analysis is based on a single case. The botanical garden's capture rate must be evaluated by considering the attendance of other attractions in the Madawaska region; as well as other factors such as the Madawaska tourism infrastructure, provincial tourism patterns, etc.

Capture rates of important tourist attractions of the region, where data is available, are included as Exhibit 2-17.

EXHIBIT 2-17: NEW BRUNSWICK TOURIST ATTRACTION CAPTURE RATES

	attendance	tourist traffic flow residents	non-res.	%
King's Landing	110 000	204 000	605 640	13.6
Village Historique Acadien	100 000	89 250	143 407	43.0
Magnetic Hill	800 000	110 400	413 639	
Reversing Falls	48 759	262 909	68 900	14.7
Jardin de la République	50 000	204 000	86 632	17.2
Grand Falls Gorge	116 000	204 000	86 632	40.0
Mont Farlagne	106 000	204 000	n/a	n/a
Jardin des Métis	130 000			

In considering these data, it seems that a reasonable capture rate for the Saint-Jacques botanical garden should be higher than the one at the "Jardin de la République" provincial park (17.7 %), but lower than that of the Grand Falls Gorge (40 %), where there is no admission price. Therefore, the Saint-Jacques' capture rate has been estimated at 23 percent, which yields an attendance figure of 67,500.

The attendance by students has been evaluated at 5,000 for the first year, which corresponds to a capture rate of 33 percent of the students within an hour's driving distance. Of note is the fact that school policy for Maine students is rigorous for trips involving international travel.

The membership for a botanical garden association has been estimated at 500 during the first year of operation. Such an association, if well managed, could potentially stimulate considerable interest in botany among the region's population.

During the years following the opening of the botanical garden, attendance should initially grow at a rapid pace, to finally reach a plateau during the fifth year of operations. This growth will be principally attributed to a growing reputation, to a greater awareness of the presence of a garden in the region and to the marketing strategy.

Moreover, the market analysis indicates that the tourism industries in the province and in the Madawaska region are healthy. The number of resident parties travelling within New Brunswick has increased by 3 percent from 1980 to 1984 and, although the number of non-resident parties has decreased from 1980 to 1983, their capture rate has improved from 37.5 percent to 48.3 percent. In the Madawaska region, non-resident traffic flow has increased (1980 to 1983), while the Saint John River Valley, of which the Madawaska region is a part of, remains the most popular in New Brunswick. If this pattern continues, the greater number of visitors should be reflected in a greater attendance rate for the Saint-Jacques botanical garden.

The attendance rate is estimated at:

Year	Attendance	% Change
first	67,500	N/A
second	82,500	22
third	97,500	18
fourth	107,500	10
fifth	115,000	7

The increase in the student's attendance rate has been evaluated at 5 percent yearly, while that of the botanical garden association was evaluated at a yearly rate of 10 percent.

3.0 INTERVIEW RESULTS

Interviews were conducted with representatives of various governmental departments, regional industrial commissions and adjacent municipalities in order to assess the general interest in the establishment of a botanical garden in Saint-Jacques, its possible role, its infrastructural needs, the necessary services and programs offered, the ensuing potential tourist and industrial development in the region and the support for this project among the said parties and among the general population.

Upon receiving a list of names of potential interviewees from the steering committee, an interview guide was developed to structure the discussion. In all, six persons accepted to discuss their opinions on the projects, while two refused by stating that they were unfamiliar with the preliminary concept.

3.1 Interest and Concerns

Most people interested in the establishment of a botanical gardens in Saint-Jacques expected its role to be similar to that presented in the preliminary concept: a tourist attraction and an educational centre with a socio-economic component. The general population, when the project was first proposed, showed considerable interest; however, the initial enthusiasm gradually died down. On the other hand, individuals who will benefit from the project, such as horticulturalists, university professors and amateur gardeners, displayed a continuing interest in the project.

During the first years of operation, it will be important to create a good "first impression", since a personal endorsement is a strong factor in attracting visitors. Under no circumstances should a half-finished garden open its doors to the public; it is crucial to construct a garden that is more than "merely

presentable". An effective marketing of school children should also be complemented during the first two years of operation. Also, the representative from the Department of Natural Resources and Energy indicated that he favors a local theme for the first two years, to later include exotic and non-native plants in the collection.

The proposed site for a botanical garden seems ideal. Because there is on or near the site a water supply and sewage system, the Madawaska River, electrical and telephone lines, near the proposed location for the visitor centre, there are few infrastructural needs. Also, an existing pumping station could be used to carry the sewage from the gardens to the municipal treatment facilities. The only identified infrastructural needs were an access road, a parking lot, a pumping station to create a river and two artificial ponds, soil improvement, a greenhouse and a fire hydrant.

Presently, passing-through tourists on their way to Nova Scotia and Prince Edward Island stop in the Madawaska region for one to two days. Tourist traffic is at times heavy in Saint-Jacques because the nearby Trans-Canada Highway is a major thoroughfare bringing western Canadians to the Maritime provinces. An additional tourist attraction which completes the existing network consisting of a campground, a golf course, an aquazoo, and water slides may compel the tourist into prolonging the duration of stay and increasing expenditures. The economic impact associated with a greater number of tourists and a notable increase in length of stay could be considerable for the Municipality of Saint-Jacques, the City of Edmundston and the County of Madawaska.

Two respondents compared the proposed location of the Saint-Jacques botanical garden with the existing Jardin des Métis on the Gaspe Coast. Although tourist traffic on the Gaspe Peninsula

is less than in St-.Jacques, the Jardin des Métis has attracted 100,000 visitors per year. The Jardin des Métis apparently does not have a well developed marketing plan, nor does it possess adequate road signs; thus the botanical garden in Saint-Jacques could possibly show a greater success.

The establishment of a botanical garden in Saint-Jacques would certainly be beneficial for the botanical industry in the region, since a marked increase in the population's interest would translate into greater sales of botanical products. Also, there is a potential for an associated industrial development in the region, since the garden would permit tourists to discover the Madawaska region and realise its industrial potential.

The botanical garden will be located next to the "Jardin de la République" provincial park. It would not be financially wise to duplicate their services, but rather to complement them. However, it is important to offer certain services such as picnic tables, benches, canteen, etc., to enable visitors to rest and thereby more fully enjoy the display. An interpretation centre, where one could obtain guides and botanical descriptions, would be an asset to this tourist attraction.

Opinions were more varied when the financial aspects were discussed. Some thought that the project should be entirely financed under the Canada/New Brunswick Tourism Agreement, while others indicated that the Collège Saint-Louis, which is affiliated with the University of Moncton and which offers courses in biology and forestry, as well as companies such as Fraser, McCain and Irving may be interested in partially financing the establishment of a botanical garden in the region.

Others were of the opinion that the botanical garden's financing should be autonomous. The admission price, probably two to three dollars, would generate some revenue. A gift shop could also

contribute financially. With support from private firms, the general population, educational institutions and certain governmental aid programs such as Challenge 88, which finances student employees, the botanical garden could possibly become self-sufficient.

Instead of buying some equipment at the project start-up, it was suggested to rent them until the management is sure of the botanical garden's long term needs. The capital costs would thereby be reduced and only the necessary equipment would be acquired. The Botanical Association for the North-west, and the Department of Tourism, Recreation and Heritage possess some equipment that could be at the botanical garden's disposal.

3.2 Development Suggestions

Besides the foreseen role, the representative from the Department of Natural Resources and Energy indicated that the botanical garden could take on an economic role; one section could be used for agricultural research, providing necessary agricultural data for the planting of specific products such as vegetables to interested parties of the region. Agricultural information pertinent to the local climate is not readily available to farmers and gardeners of the region; all data are presently provided by the Hoyt greenhouse, near Fredericton, which is located in a somewhat different climate that the one prevailing in Madawaska County. A section reserved for agricultural research may stimulate entrepreneurs in the region to establish a large scale greenhouse, thus creating employment and a potentially important economic benefit.

Furthermore, the Grand Falls Industrial Commission would appreciate the botanical garden providing trees, shrubs and plants to help embellish the region.

The planner among the respondents suggested that the services offered by the botanical garden include the selling of souvenirs and horticultural-theme products, on a profitable-basis, as well as practical and educational aspects. The planned programs could consist of instructional courses for adults, teaching topics such as planting in specific conditions, greenhouse construction, plantings available in the region and floral arrangements. Senior citizens are generally interested in the floral arrangement courses, which can become therapeutic, and homes could even include these in their weekly activity lists.

4.0 CONCEPT REFINEMENT

This phase of the study has involved a review of comments received from our last submission, and further refinement and development of the program for the Preliminary Master Plan. The refined master plan is developed around the concept of fencing the site and controlling access to and from the gardens through the visitor centre. A detailed plan of the concept is shown as Figure 4-1.

4.1 Access

The concept utilizes the existing junction road which crosses the Canadian National Railroad to consolidate access to the botanical garden, Les Jardins de la République provincial park and the automobile museum. An information sign will be located near the entry to the botanical garden drive, outlining ongoing activities of all three facilities, which will help to maximize a visitor's enjoyment.

Access to the existing public landing wharf is provided through the provincial park access road and through the main entry road to the botanical gardens.

4.2 Vehicular Circulation

The concept allows for the development of a landscaped entry drive which establishes the horticulture theme, offers framed views of the visitor centre and provides visitor access to the parking lots.

Service access to the visitor centre and greenhouses will be provided directly from the existing service road and will connect to the production nursery and maintenance areas adjacent to the Department of Tourism administration buildings.

4.3 Parking

The concept retains all visitor parking in one area, while creating three smaller lots for automobile and bus parking, enabling more landscape buffering to be done. This will reduce the visual impact of the large expanses of pavement as well as reinforcing the horticultural nature of the facility. The visitor will begin to experience the displays while on the way to the visitor centre. These three smaller lots will accommodate approximately 200 vehicles. A fourth parking lot is provided for the automobile museum and is linked to the other parking lots with a pathway, providing overflow parking opportunities during peak visitation days.

A circulation system which allows handicapped access and bus drop-off will be established at the visitor centre.

Parking for employees and servicing vehicles have been established near the visitor centre and the nursery production facilities. While the internal pathway system will be designed to handle emergency and staff vehicles, public vehicles will not be permitted into the gardens.

4.4 Visitor Centre

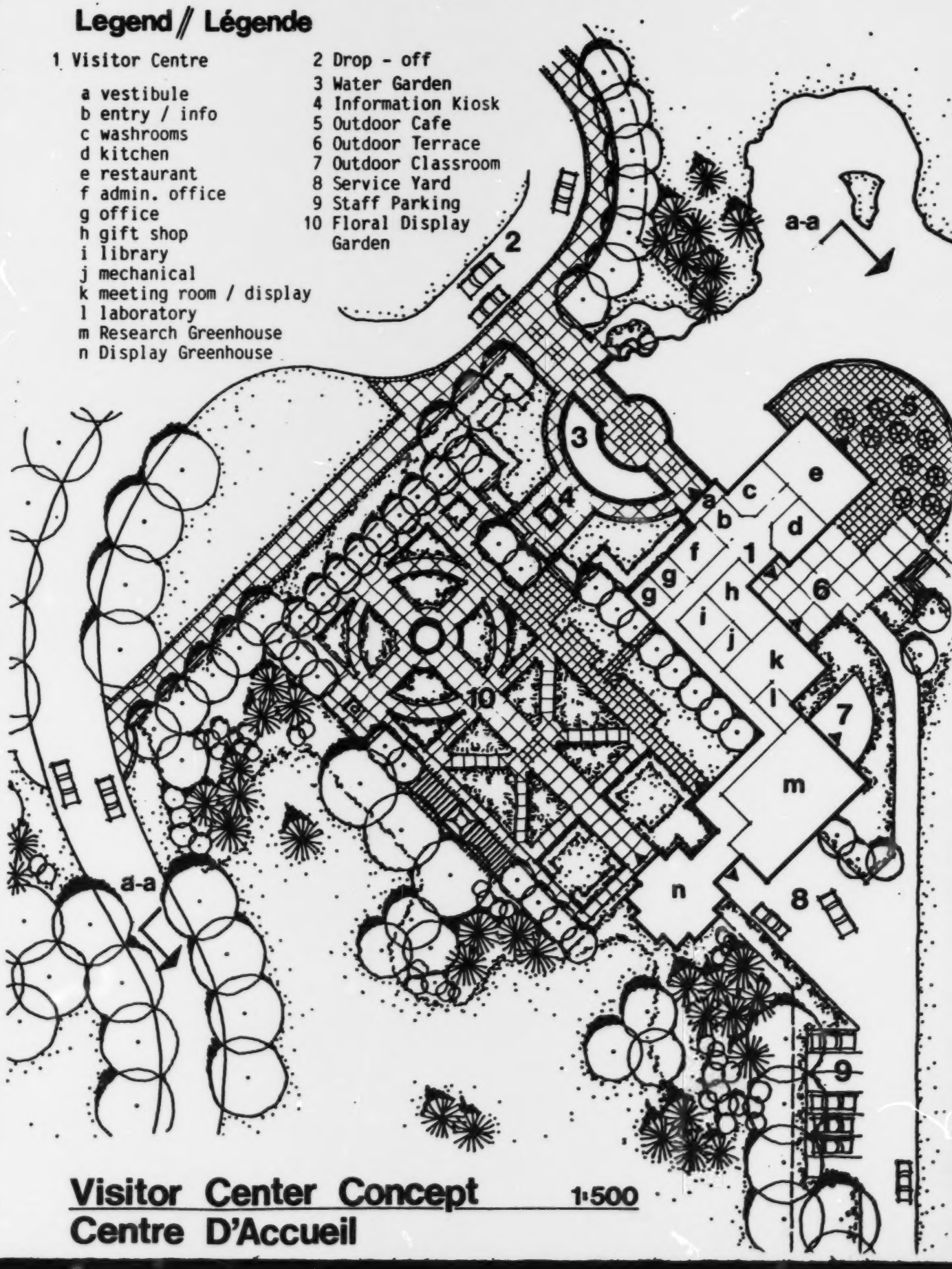
The visitor centre acts as a focal point from both the Trans Canada Highway and the horticultural entry drive. With this new siting walkway distances from the parking lots have been shortened, as well as allowing greater separation from the potential noise of the railroad line. A detailed Plan of the Visitor Centre is shown as Figure 4-2.

Legend // Légende

1 Visitor Centre

- a vestibule
- b entry / info
- c washrooms
- d kitchen
- e restaurant
- f admin. office
- g office
- h gift shop
- i library
- j mechanical
- k meeting room / display
- l laboratory
- m Research Greenhouse
- n Display Greenhouse

2 Drop - off
3 Water Garden
4 Information Kiosk
5 Outdoor Cafe
6 Outdoor Terrace
7 Outdoor Classroom
8 Service Yard
9 Staff Parking
10 Floral Display Garden



Visitor Center Concept 1:500
Centre D'Accueil

The visitor centre will offer a number of facilities such as a restaurant, washrooms, information/display area, administration office, gift shop/plant sales, and research laboratory. Ticket control, reception and washrooms will be provided at the main entry point.

The proposed restaurant, as well as an indoor dining area, will have an outdoor terrace for refreshments and light meals.

A special garden area which will accommodate weddings and conventions will be located near the visitor centre, just across the lake. This area will be designed with a theme such as the re-creation of a Victorian tea garden with a decorative gazebo. The short distance from the Visitor Centre will allow wedding parties to assemble and be photographed without disruption to other visitors using the centre.

The greenhouse area adjacent to the visitor centre has been differentiated to provide a display greenhouse which would create a distinctive architectural feature. The architecture of the visitor centre will have a modern look, to integrate it visually with the provincial park building,while the display greenhouse would evoke more traditional horticultural design and so create a recognizable visual symbol for the botanical garden. This display greenhouse will provide year round interest for inter-provincial visitors to the area and seasonally changing displays will interest the local and regional tourist market. A small service yard is proposed south of the production wing of the greenhouses, screened from views to the outdoor cafe.

An outdoor work area adjacent to the production/research greenhouse will provide a flexible area in which to hold plant sales, outdoor classes, or to stage temporary exhibits or competitions.

4.5 Pedestrian Circulation

The gardens have been developed with a hierarchy of paths which originate and terminate at the visitor centre. The overall site circulation has been developed as a series of loops, allowing the visitor to experience a number of different garden areas depending on their length of stay.

The primary path system, of approximately 700 metres, will link the main thematic displays such as the Annual Garden, Rose Garden, and the Perennial display. This path network, which is accessible to maintenance and emergency vehicles, could also be utilized by a people mover system such as an open motorized cart, seating 8 - 10 people, which would provide guided tours of the main display areas. Motorized carts such as these are presently being used by other botanical gardens to move employees and their equipment from garden to garden. The pathway would be approximately 3.5 metre wide and have an asphalt type surface with a decorative edge.

The secondary path system proposes approximately 1,100 metres of path which is also accessible to maintenance are emergency vehicles. This path network will allow the visitor to explore some of the quieter areas of tree and shrub collections such as the Shade garden, the conifer collection and the Bog garden.

All paths will be enhanced with seating, signage and other site furnishings.

4.6 Earthwork/Topography

This concept utilizes extensive earthwork to diversify the landscape and create greater opportunities for specialized soil and microclimatic conditions.

Fill from the excavation of the small ponds, brook and lake will allow high points to be created. The highest point on the site will be adjacent to the visitor centre. A second promontory will be created in the rose garden. These high points will allow the creation of strong visual alleys between the two areas, while allowing a panoramic view from the pergola in the rose garden to the mountains. The last area of site contouring will be in the form of a bern/dyke to reduce the limit of seasonal flooding of the Madawaska River, along the south-east corner of the site.

Intake from the Madawaska River will be located underground, feeding into the first of the two small ponds. The first pond which is at a higher elevation will flow over a small waterfall to the second pool and subsequently to the lake. The lake, it's island and the flowery brook will form a visual setting for the perennial garden. The stream will continue to flow back to the river through the Arboretum where it widens into a Bog area for native aquatic plants.

As outlined in the initial study, the soil over the entire site will be amended to improve soil fertility. A minimum depth of 30 cm of amended soil will be spread over the entire site, although detailed design of special areas may require greater depths or specific soil types. In addition, a tile drainage system is proposed for the entire site.

4.7 Plantings/General

In general, there are two types of plantings required for the botanical garden. The framework planting, usually conifers or large trees, will define site boundaries, screen areas such as the parking lot and rail lines, and create windbreaks. These plantings will visually separate and form backdrops for specific display gardens as well as creating microclimatic differences.

A second type of planting which includes trees, shrubs, perennials and annuals will be used to create the horticultural theme areas and the landscaped setting for the visitor centre.

4.8 Thematic Gardens

There are a number of different types of thematic gardens proposed, sequentially joined to move the visitor over the entire site.

4.8.1 Visitor Centre

Since the ticket control is located inside the visitor centre, all gardens will be screened from view from the parking areas and adjacent facilities. This screening will consist of a combination of fencing and horticultural plantings.

For the plantings adjacent to the visitor centre, larger sizes of trees and shrubs will be specified to give a mature landscape look to this area when the facility is first opened. Conifers or deciduous plants with interesting winter form or colour as well as summer flowering water lilies and annuals will highlight the entrance and ensure an attractive year-round setting for the visitor centre.

4.8.2 Annual Garden

There are two main areas of annual display in the botanical garden.

The largest area, located near the visitor centre, is accessed from the greenhouses and visitor centre and is screened from the entry drive by a series of horticultural plantings and decorative fences. This area will provide floral display throughout the spring, summer and early fall. The main display will be the

summer annuals, augmented by spring flowering bulbs and fall displays of pansies and chrysanthemums. The high degree of maintenance necessary for this type of garden will form an excellent "first impression" to the botanical garden as well as providing colorful views from the visitor centre and display greenhouse. Visitors to the botanical garden who have a short time to spend can quickly appreciate the interwoven colours and textures. The visitor who is spending a day or two at the garden can linger longer and obtain information from comparisons of the comprehensively labelled species and varieties.

The focus of this type of floral display is the visual effect of large numbers of plants of a single texture or colour. A framework of beds and decorative paving will create a tapestry of shapes reminiscent of formal historical gardens. The decorative fencing, fountains, benches and statuary designed for this area, as well as the views to the display greenhouse will make this an attractive garden for photographers.

The colour and theme of this garden will change yearly, which ensures that repeat visitors will always find something new to experience. The majority of annuals used in this area will be custom ordered from greenhouse growers in the Edmundston area.

The second area of annual display is a research oriented "trial garden". This area, located in the arboretum adjacent to the nursery, will display new varieties of flowers, possibly vegetables, and test their performance in the New Brunswick climate. Superior varieties will then be introduced into the main floral display gardens. This garden will be of interest to local gardeners, academics, and the nursery trade. The stock for this garden will be grown on the site. This cultural information could also be disseminated to local greenhouse growers.

4.8.3 Economic/Native Plant Garden

This very special garden will provide unique educational and research opportunities for tourists, school groups, horticultural enthusiasts as well as botanical academics and should become the theme garden for the facility.

Recent botanical research in ethnobotany, the study of the cultural uses of plants, has provided an important area for interpretive exhibits or displays. The knowledge of how various cultural groups used plants as an integral part of their lives, in ways that were taught to generation after generation, can offer exciting exhibit potential. The Economic/Native Plant Garden will highlight native species of plants which have played an important role in the history of the area.

The use of native plants by the Indians of New Brunswick (Micmacs, Maliseets) as food sources, raw materials for textiles, dyes and herbal remedies, and building construction have been documented (See Appendix 1). Often these same plants were used by Acadian settlers, others are still being used as raw material for many provincial industries (See Appendix 2). A garden which displayed these plants and self-directed interpretive signage could illustrate the rich heritage of the Bray Region as well as New Brunswick in general. During July and August (peak visitation season) it may be possible to schedule special lectures or displays with "hand-on" demonstrations of plants being used or prepared for use.

A secondary component of this garden area could offer the visitor the opportunity to view a display of rare Canadian plants which are found in New Brunswick. These plant species which are rare throughout Canada, are of national and provincial interest.

Examples are: Carex josselynii Sedge
Pedicularis furbishiae Wood-Betony
Scirpus caespitosus delictulus Bulrush
Platanthera leucophaea Fringed Orchid

4.8.4 Rose Garden

Since the rose is one of the most popular and widely grown flowering plants in Canada this garden will have great educational potential and appeal for every visitor. This area will exhibit a collection of many different hybrid roses such as Hybrid Teas, Miniatures, Climbing and Pillar roses, as well as Shrub roses.

As the St. Jacques site (Zone 3b Canadian Plant Hardiness Map) will present rigorous growing conditions for tenderer varieties, special emphasis in this garden will be the display of the many excellent hardier shrub roses, i.e. "Champlain", "Henry Hudson" and "Prairie Dawn", which have been bred in Ottawa and Morden, Manitoba. Specialized maintenance to ensure adequate winter protection (soil mounding, wrapping, mulching, etc.) will be required to protect tender or young plants.

This garden will form one of the major activity nodes on the site, with a strong visual axis to the visitor centre and the Notre Dame Mountains to the North and East. A large part of a rose garden's appeal is the result of the visual blending of myriad shades and tints of reds, yellows, mauves and creams, as well as the blending of fragrances. This garden contains a high point or overlook which allows the visitor to experience the panorama of colours and scents without diminishing the pleasure of contemplation of the individual flower's form or texture. Since there are so many different varieties of roses ranging in size from .05 metre miniatures to 2.0 metre shrubs, planting beds of different size variations can create visual interest.

Structures, including fences, walls, arbours and pergolas, required for climbing roses would be used to visually define this garden and reinforce circulation.

Examples of Roses:
- Hybrid Teas
- Grandifloras
- Floribundas
- Polyanthus
- Hybrid Perpetuals
- Climbers
- Shrub Roses (Rosa rugosa and hybrids)
- Species Roses and hybrids
  - Rosa alba
  - Rosa centifolia
  - Rosa chinensis
  - Rosa damascena
  - Rosa gallica
  - Rosa moyesii
- Miniatures

4.8.5 Perennial Garden

This garden will display flowering herbaceous plant material in a number of different settings. Located on the shoreline of the largest lake, with a portion of the brook flowing through, this area presents opportunities to grow many water loving plants such as primroses, day lilies, Siberian and Japanese irises. A second feature will be combinations of perennials, annuals and shrubs. Finally, beds of perennials could be set in a grassy plain creating tapestries of yellows, reds or blues which will also act as a transition to the adjacent arboretum.

A special feature of this garden will be an internal path system which connects the perennial garden by a decorative bridge to the island in the largest lake. This area will offer views to the

rose garden as well as a panoramic view of the various perennial beds. A special feature such as sculpture or statuary will be located on the island.

4.8.6 Arboretum

The arboretum is wrapped around the west, south, and east periphery of the site and has two functions. The arboretum will be used primarily for the study of conifers such as spruce, pine, fir and larch, although this large park like area will also contain a number of smaller collections. The second function will be to provide buffering of off site features such as the railroad line and gravel extraction.

The Native Garden will display plant communities typical of the area. A link may be created to the small island in the river which has an existing trail network through a natural area of vegetation, ultimately creating a habitat to attract and interpret birds.

The Bog and Aquatic Gardens will display aquatic plants in a variety of site conditions. These gardens may deal exclusively with plants indigenous to the region or introduce ornamentals such as hybrid water lilies.

A new feature in this concept is the Meadow Garden which will display many of the flowering plants and grasses which are native to the New Brunswick area. The rough grass of the area will form an interesting contrast to the mown turf which displays the conifer collection.

The Shade Garden in this concept is proposed for an area adjacent to the lake and will be at its peak in the spring when the ground will be covered with drifts of native wild flowers. Later in the year this quiet, contemplative garden will form a delightful

contrast to the busier areas of the site. In the sheltered microclimate of this garden it will be possible to display tenderer plants such as rhododendrons and deciduous azaleas.

4.9 Nursery Production Area

A service area which contains; a warehouse building, staff parking, two plastic greenhouses, outdoor storage area, lath house and outdoor growing area, has been established near the Department of Tourism administration buildings. Access to this area, which is fenced from the public area of the botanical garden, is provided from the existing service road. Gardening crews can also enter the botanical garden from a fenced gate which leads to one of the secondary paths.

Plants which are raised from seed can be grown in this nursery until they are large enough to set out into the garden. This service area will also hold plants, in the greenhouse or lath house, such as the annuals purchased from local growers, until they can be set out in the floral display garden.

A profile view of the garden is shown in appendix 3.

5.0 FINANCIAL ANALYSIS

This chapter presents a financial analysis which assumes that the concept is entirely financed under the Canada/New Brunswick Tourism Agreement, implying that there are no amortization costs involved.

5.1 Capital Costs

The capital costs and its various components are presented as Exhibit 5-1.

The study costs include the preparation of construction drawings, call for proposals and awarding of contracts, inspection, project administration and all costs associated with these activities.

The start-up costs will permit the hiring and training of the personnel prior to the opening of the garden, as well as the start-up of operations.

More than half of the site development costs consist of earthwork, such as the excavation of lakes and streams, the transportation of fill, rough grading, the creation of a berm along the river, as well as the waterproofing of the lakes and streams. Infrastructure costs, which involves the construction of parking and vehicular circulation system, a wastewater network, a water supply (irrigation) system and hydro lines, as well as the fencing of the site, were included in the site development costs.

Landscaping costs consist of fine grading, seeding, sodding, the planting of trees, shrubs, perennials, groundcovers, bulbs, corms, annuals and interior plants. Also included in this category are the costs associated the with stonework, retaining

EXHIBIT 5-1: DETAILED CAPITAL COSTS (estimated cost in $1988)

A	Study Costs		
	professional fees	$ 274 200	
	administration	32 800	
	TOTAL		$ 307 000
B	Start-up Costs	76 000	
	TOTAL		76 000
C	Site Development Costs		
	demolition and clean-up	11 000	
	earthwork	620 000	
	excavation of lakes and streams		
	transported fill		
	rough grading		
	creation of berm along river		
	drainage (tiling)		
	waterproofing lakes & streams		
	parking & vehicular circulation	160 000	
	wastewater	22 000	
	water supply	82 000	
	irrigation system		
	hydro	55 000	
	fencing (site boundary 1,170 m)	70 000	
	contingency 10 %	102 000	
	TOTAL		1 122 000
D	Landscaping Costs		
	fine grading, seeding, sodding	55 000	
	planting	415 000	
	trees, shrubs, perrenials, groundcovers, bulbs & corms, annuals, interior plants		
	stonework & retaining walls	200 000	
	pedestrian circulation	100 000	
	landscaping features & facilities (furnishings)	430 000	
	pergolas, arbours, benches, waste receptacles, drinking fountains,gazebos, bridges, fountains, reflecting pools, decorative fencing, outdoor		

terrace / cafe, decorative paving, lighting, signage, sculpture, statuary

contingency 10 %	120 000	
TOTAL		1 320 000

E Building Costs

visitor centre		
building	393 000	
furniture & accessories	84 000	
TOTAL		477 000
greenhouses		
display house	130 000	
production/research	120 000	
nursery area	25 000	
TOTAL		275 000
warehouse		
office/staff area	19 500	
storage	51 000	
TOTAL		70 500
contingency 10 %	82 500	
GRAND TOTAL BUILDINGS		905 000

F Fixed Assets

1 - 30-40 HP tractor, front end loader and backhoe	35 000	
1 - motor cultivator	3 000	
2 - self propelling mowers	20 000	
2 - pickup trucks	35 000	
1 - facility vehicle	15 000	
2 - sprayers	11 000	
1 - trailer	3 000	
1 - plow	2 000	
1 - grinder	5 000	
1 - snow plow	3 000	
6 - manual mowers	2 600	
2 - modified golf carts	5 000	
2 - edge cutters	700	
TOTAL		140 000

G	Non Durable Goods			
	tools			
		4 - wheelbarrows	575	
		10 - 100 ft hoses	1 300	
		tools, rakes, shovels, pruning, shears, etc.	3 275	
	TOTAL			5 150 E
	materials			
		soil - 150 cu. yds.	1 650	
		peat moss - 300 bales	2 000	
		lime, fertilizers, pesticides, herbicides	4 400	
		flats, pots, labels	2 800	
	TOTAL			10 850 E
	TOTAL NON DURABLE			16 000 E
H	Promotional Expenses			
	botanical program			
	plant identification & labeling		20 000	
	site squaring		5 000	
	microcomputer		5 000	
	TOTAL			30 000 E
	information program			
	promotion, publicity, interpretive program		40 000	
	microcomputer (share with office)		5 000	
	TOTAL			45 000 E
	TOTAL PROMOTIONAL			75 000
I	Contingency Reserve 3%		118 830	
	TOTAL			118 830
	GRAND TOTAL CAPITAL BUDGET			$4 079 830

walls, pedestrian circulation (primary and secondary), as well as the landscaping features and facilities such as pergolas, arbours, benches, waste receptacles, drinking fountains, gazebos, bridges, fountains, reflecting pools, decorative fencing, outdoor terrace/cafe, decorative paving, lighting, signage, sculpture and statuary.

Building costs were evaluated for a 365 m^2 (3,930 sq. ft.) visitor centre, including furniture and accessories, for three types of greenhouses: a display greenhouse of 93 m^2 (1,000 sq. ft.), a production/research greenhouse of 139 m^2 (1,500 sq. ft.), and a nursery area of 232 m^2 (2,500 sq. ft.) as well as for two warehouses: an office/staff area of 30 m^2 and a storage area of 120 m^2 (1,275 sq. ft.).

The fixed assets consist of all the machinery necessary for the daily maintenance of a botanical garden. The equipment and tools that can be replaced or added during the construction period are included in the non durable goods.

Promotional expenses are expected for the botanical program, which consists of plant identification and labelling, and the information program, which consists of the promotion and publicity of the garden as a tourist attraction.

The total capital costs are evaluated at $4,079,830.

5.2 Annual Operating Costs

The annual operating costs were estimated according to experience at four botanical gardens in Canada. Operating costs are detailed in Exhibit 5-2, while the wages and salaries are shown in Exhibit 5-3.

EXHIBIT 5-2: OPERATING BUDGET SUMMARY ($1988)

A	Non Durable Goods		
	supplies / plants		
	soil amendments	$ 1 650	
	container, pots, etc.	850	
	seeds - annuals, perennials, trees, etc.	1 000	
	plants - trees, shrubs, perennials, etc.	10 000	
	bulbs - daffodils, tulips, lilies, etc.	10 000	
	annuals (custom grown)	10 000	
	pesticides, fertilizers, etc.	500	
	labels	500	
	TOTAL		$34 500
B	Spare Parts and Maintenance		
	tools	550	
	clothing	1 000	
	spare parts		
	machinery	1 650	
	buildings	1 650	
	TOTAL		4 550
C	Fuel and Heating		
	heating greenhouses	18 250	
	heating visitor centre	4 000	
	oil and fuel - vehicles	8 200	
	TOTAL		30 450
D	Power		6 000
E	Office Supplies / Books		
	stationery, office supplies	2 000	
	brochures and promotional posters	5 500	
	books, magazine subscriptions	3 000	
	TOTAL		10 500

EXHIBIT 5-3: WAGES AND SALARIES

	salary
REGULAR EMPLOYEES	
1 chief horticulturist	$ 38 000
1 head gardener	27 000
2 gardeners ($10/hr.) (the second starting in year 3)	42 000
1 interpretive / educational program officer (year 3)	26 000
1 mechanic / maintenance personnel (under contract, $1,000/mo.)	12 000
1 secretary/receptionist/ accounting	25 000
fringe benefits	15 %
SEASONAL EMPLOYEES	
4 gardeners, 20 weeks @ $10/hr.	32 000
4 assistant gardeners 20 weeks @ $7/wk.	22 400
1 ticket clerk 100 days * 9 hours * $6/hr.	5 400
1 gift shop clerk 30 weeks @ $5/hr.	6 000
fringe benefits	11 %

The pro-forma budget for the botanical garden is presented as ELxhibit 5-4. The annual operating costs were evaluated by assuming that the concept is entirely financed by the Canada-New Brunswick Tourism Agreement.

The garden's attendance was estimated by assuming a capture rate of 23 percent for non-resident and resident traffic flow during the first year of operations, and with a greater awareness of the presence of a garden in Saint-Jacques, attendance figures should increase during the next four years, to level off in the fifth, as shown in Chapter 2.

A comparison of the attendance figures to the capital costs for a tourist attraction such as Magic Mountain in Moncton yields a ratio of $36 per visitor (capital costs of $5.1 million with a visitation rate of 141,300). The capture rate of the water slides is approximately 17 percent, since the Magnetic Hill area attracts 830,000 visitors per year.

The above analysis, when applied to the botanical garden of Saint-Jacques, assuming capital costs of $3.5 million, yields an attendance rate of 95,000 visitors per year. However, when applying the water slides' capture rate to the botanical garden in Saint-Jacques, the projected attendance figures are much lower. This exercise reinforces the attendance projections of Chapter 2.

The attendance revenues were calculated according to the following admission price scale:

. adults	$3.25
. families	7.00
. students	1.00
. season pass	25.00

According to the past experience at similar attractions such as King's Landing and the Village historique acadien, attendance revenues can be approximated by multiplying the attendance figures by a percentage of an adult's entrance fee. Because tourist attractions such as an historical village and a botanical garden are often visited by families, the factor used for the botanical gardens estimate is 55 percent.

The gift shop and special events revenues were estimated according to past experience at King's Landing and the Village historique acadien in 1986-87. According to their figures, revenue from the above sources can be estimated by multiplying the attendance revenues by a factor close to unity for the gross revenue, and multiplying that figure by 50 percent to yield the net revenue from these sources.

Expenses were increased by 5 percent yearly for the four years following the grand opening.

TABLE 5-4: PRO-FORMA BUDGET, CAPITAL COSTS OF $4.1 MILLION

ATTENDANCE:					
general	67,500	82,500	97,500	107,500	115,000
students	5,000	5,250	5,513	5,788	6,078
membership cards	500	750	1,000	1,250	1,500
total	73,000	88,500	104,013	114,538	122,578
DESCRIPTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
REVENUE:					
attendance, general	120,656	147,469	174,281	192,156	205,563
attendance, students	5,000	5,250	5,513	5,788	6,078
attendance, membership	12,500	18,750	25,000	31,250	37,500
work grant	22,400	22,400	22,400	22,400	22,400
gift shop, restaurant net revenue	70,958	86,726	102,495	113,007	120,891
special events, exhibits	7,469	9,128	10,788	11,894	12,724
GROSS REVENUE	238,983	289,723	340,477	376,496	405,156
OPERATION COSTS:					
salaries	214,488	225,212	290,523	305,049	320,302
insurance	4,000	4,200	4,410	4,631	4,862
supplies/plants	34,500	36,225	38,036	39,938	41,935
spare parts, clothing, tools	4,550	4,778	5,016	5,267	5,531
electricity, telephone	6,000	6,300	6,615	6,946	7,293
heating, oil and fuel	30,450	31,973	33,571	35,250	37,012
office supplies, books promotion	10,500	11,025	11,576	12,155	12,763
banking costs	4,000	4,200	4,410	4,631	4,862
legal and audit	3,000	3,150	3,308	3,473	3,647
GROSS OPERATING COSTS	311,488	327,062	397,466	417,339	438,206
NET REVENUE	(72,505)	(37,339)	(56,989)	(40,843)	(33,050)

6.0 PROMOTIONAL STRATEGY

Since a major factor in evaluating the success of a botanical garden is its visitation rate, it will be important to develop an effective advertising and promotional campaign.

This section offers suggestions for a promotional strategy. The intensity of promotions should be high in the beginning of operations in order to achieve an effective market penetration. Thereafter, it will be important to maintain a continuous but less intense level of advertising.

The strategy should be based on both a general approach to the public and a specific approach to target markets.

General Approach

The general approach involves promotion which is geared towards creating awareness of the facility amongst the local and regional population. It should be informative and provide details regarding the services, physical plant, hours of operation, types of activities available, and rates. It will be important to stress that the facility is family-oriented.

The most effective medium to reach a maximum audience with this information would be (in order): television, radio, and local/regional newspapers. The frequency of ad placement should be several times per week initially, gradually tapering off to once per week or even bi-weekly, particularly in the peak season.

In order to reach the greatest number of households with these medium, it may be wise to include a journalist in the botanical garden's executive committee. In this manner the journalist will be aware of all developments as they occur, and will be able to provide the population with accurate press releases.

Site construction could also be filmed, in order to produce a promotional video.

In addition to these initiatives, it will be essential to:

1. Develop an informative/interesting pamphlet or brochure;

2. Ensure promotional literature is available at all Tourism Information Centres in the province, and particularly at points of entry (e.g. Saint-Jacques, Campbellton, Woodstock, Cape Tourmentine, etc.);

3. Provide adequate road signs to the garden, although the site is visible from the Trans Canada Highway; and

4. Subscribe for a large size well designed ad in the yellow pages.

Specific Approach

The specific approach is geared towards the target markets: amateur gardeners, outdoors-oriented persons, senior citizens, biology students and other students. There are several approaches recommended in order to obtain maximum exposure with these groups. These include:

1. Participation in agriculture fairs in the Maritime provinces.

2. Direct contact (by mail) with school boards and senior citizens clubs.

3. Develop linkages with clubs and organizations through sponsorship of activities (related or not) to horticultural theme competitions and events.

4. Advertising in periodicals, e.g. Outdoor Life; Field & Stream; Outside; Walking, etc.

Start-Up

When the facility is opened, subsequent to the completion of construction, a well organized ribbon-cutting ceremony with local dignitaries and politicians in attendance should be used to generate publicity and awareness. Dignitaries could include: Mayor of St. Jacques, (Mayor of Edmundston, interested Senators), representatives of local/regional service clubs, and the executive members of relevant organizations.

The previously mentioned actions will be necessary to maintain healthy business volume. However, the single most important source of promotion for the proposed type of operation (largely because of its seclusion) will be word-of-mouth referrals from clients to other potential visitors. A personal endorsement is the highest and best accolade a business can receive. This can only be guaranteed by offering a quality experience in a superior environment (natural and built-form) coupled with exemplary service provided by courteous staff.

7.0 ECONOMIC IMPACT

The economic impacts of the above concept were determined for the initial capital costs, for the continued use of the amenities, and for the resulting increased tourism. The effects described in this section are incremental to existing economic activity.

The implementation of the concept would amount to a total capital expenditure of approximately $4,079,830. The economic impacts from construction would arise from the purchases of materials and labour. Assuming that the breakdown of materials and labour is the normal 50% materials and 50% labour, then the direct material costs would amount to $2,039,915 and the labour costs would amount to $2,039,915. In addition, short term indirect increases in demand (increases in purchases by supplying industries) and induced demand (re-spending of income by households) are generated.

The $2,039,915 in construction labour involved translates into about 58 person years of labour. (This assumes an average construction wage in New Brunswick of $35,000 which includes fringe benefits and administration). Given the seasonality of construction employment in New Brunswick, the 58 person years of labour translates into 99 jobs for construction workers for a given seven month construction period.

In addition, the government will benefit from the capital expenditures on materials and labour through additional tax revenues. The $2,039,915 in material costs will provide an additional $1,224,391 in tax revenue to the provincial government (11%), and an additional $163,193 in tax revenue to the federal government (8%). The $2,039,915 in labour costs will result in an average wage of about $26,00 for the 35 construction jobs (based on approximately 25%of the average $35,000 construction wage which includes fringe benefits and administration). This

translates into additional federal income tax revenues of approximately $5,143 per person plus additional provincial income tax revenues of $2,983 per person. In total, the 58 construction jobs at an average wage of $26,000 per year indicates $298,294 in additional federal income tax revenues and $173,014 in additional provincial income tax revenues.

The annual operating costs will also contribute to the region's economy. Its contribution to the Province's Gross Domestic Product (GDP) can estimated by using the economic multipliers published by the Input-Output Division of Statistic Canada. In the first year of the operation, the Gross Domestic Product should increase by $78,659. This estimate is detailed in Exhibit 7-1.

Besides the contribution to the Gross Domestic Product, salaries also contribute, both directly and indirectly, to the economy of the region. The 4 permanent and 10 temporary employees during the first years of operation of the Saint-Jacques botanical garden directly contributes $214,488 to the economy in salaries and $97,000 in supplies. The salaries, which are spent in the region in the form of services, products, taxes, etc., contribute $49,139 in indirect labour costs (multiplier of 0.2291 published by Statistics Canada).

EXHIBIT 7-1: OPERATING COST CONTRIBUTION TO GROSS DOMESTIC PRODUCT (OTHER THAN SALARIES)

Operating Cost	Multiplier (GDP)	Expense	Contribution
Insurance	0.7874	4,000	3,136
Supplies	0.9789	34,500	33,772
Spare Parts, Clothing, Tools	0.7145	4,550	3,251
Electricity, Telephone	0.7661	6,000	4,597
Heating	0.7661	22,250	17,046
Oil And Fuel	0.3079	8,200	2,525
Office Supplies Books, Promotion	0.7741	10,500	8,128
Banking Costs	0.7540	4,000	3,136
Legal And Audit	1.0225	3,000	3,068
TOTAL			78,659

All of the above profits will also be subject to taxes of course, which will mean addition tax revenues to the Province.

Although the botanical garden is not expected to change the total number of tourists coming to New Brunswick, it will complement the existing good quality tourist attractions of the Province.

APPENDIX 1

Native plants reported to be in the Edmundston area which were used by Indians of the region i.e. Micmacs. Information from Annotated Checklist of the Woody Plants of New Brunswick, Harold R.Hinds (1979)

PLANT MATERIAL	USE
Balsam Fir (Abies balsamea)	- resin used to treat wounds
White Spruce (Picea glauca)	- roots used as stitching for birch bark canoes, utensils such as dishes and water pails
Eastern White Cedar (Thuya occidentalis)	- wood used for canoes, arrow shafts and woven mats
Trembling Aspen (Populus tremuloides)	- inner bark used to make infusion for sore eyes
Long-Beaked Willow (Salix bebbiana)	- leaves for tabacco, twigs for pipe stems, branches for temporary structures
Shining Willow (Salix lucida)	- bark infusion to cure vomiting
White Birch (Betula papyrifera)	- very important-used to cover canoes, for cooking horns, utensils, moose calling frames, and sugar from tree sap kindling, snowshoe
American Beech (Fagus grandifolia)	- canoe paddles, snowshoe frames
Sugar Maple (Acer saccharum)	- wood used for bows and arrows sap for sugar and syrup

Native plants found in other parts of the province which were used by Indians.

PLANT MATERIAL	USE
Ground Juniper (Juniperus communis depressa)	- Micmac Indians used it to weave mats
Butternut (Juglans cinerea)	- Oil from nuts, bark and outer layer of nuts used for dye
Mossy - Cup Oak (Quercus macrocarpa)	- acorns used as a food source
Staghorn Sumac (Rhus typhina)	- leaves added to smoking mixtures berries steeped and used as a cure for sore throat and earache
Rope Bark (Dirca palustris)	- bark used to make thongs
Soapberry (Shepherdia canadensis)	- berries used in drinks
Silky Dogwood (Corus amonum)	- used in smoking mixtures, as a black dye and a fever remedy
Bearberry (Arctostaphylos uva-ursi)	- leaves used in smoking mixtures
White Ash (Fraxinus americana)	- axe and knife handles
Black Ash (Fraxinus nigra)	- used in basket making

APPENDIX 2

Native plants which have been used in a commercial or historical way by early settlers in the province of New Brunswick. Information from Annotated Checklist of the Woody Plants Of New Brunswick, Harold R.Hinds (1979)

PLANT MATERIAL	USE
Balsam Fir (Abies balsamea)	- elixir made used for colds, and as a source of Vitamin C
White Spruce (Picea glauca)	- new growth used to make spruce beer
Red Spruce (Picea rubens)	- spruce beer
White Pine (Pinus strobus)	- the most valuable of the softwood lumber trees
Eastern White Cedar (Thuya occidentalis)	- used for fence posts, shingles and fence rails
Eastern Hemlock (Tsuga canadensis)	- coarse lumber and pulp, bark used for tannin for leather and as a curative for burns
White Poplar (Populas alba)	- bark used to obtain salicin, a fever remedy
Large Toothed Aspen (Populas tremuloides)	- pulp and plywood manufacture
Trembling Aspen (Populus tremuloides)	- infusion of the bark was a popular vermifuge used by the Acadians
Basket Willow (Salix purpurea)	- basket making
Sweet Gale (Myrica gale)	- leaves used to flavour a type of beer
Mountain Alder (Alnus crispa mollis)	- bark used to make brown dye
Yellow Birch (Betula lutea)	- sap used by the Acadians to "sucre de seve"

White Birch
(Betula papyrifera) - wood used as a veneer

Hop Hornbeam
(Ostrya virginiana) - wood used for tool handles, wedges and levers

Witch Hazel
(Hamamelis virginiana) - leaves used to make Pond's Extract, an after shave
lotion and toilet water

Wild Cherry
(Prunus sp.) - fruit used to make jams

Black Cherry
(Prunus serotina) - fruit used to flavour alcoholic liquers bark used in cough medicines

Mountain Ash
(Sorbus americana) - fruit used in jelly

Black Locust
(Robinia pseudo-acacia) - wood used in veneer and furniture sap for sugar

Sugar Maple
(Acer saccharum) - very important tree used for firewood hardwood pulp, tools, as well the sap was used for sugar and syrup
veneer, furniture, farm

Large Cranberry
(Oxycoccus macrocarpus) - source of the commercial hybrid cranberry

White Ash
(Fraxinus americana) - wood used for sporting good handles, agricultural tools and furniture

Elderberry
(Sambucus canadensis) - fruit used for wines, pie fillings and jellies